

MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,
Mining, Contracting, Engineering, Building, and General
Business Interests of the South and Southwest

Vol. 68
No. 3

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The Prayer of Every Honest American

May God uphold, strengthen and
guide Woodrow Wilson in this momen-
tous hour freighted with possibilities
for civilization and human weal or
woe such as no other President ever
faced.

BALTIMORE, JULY 22, 1915



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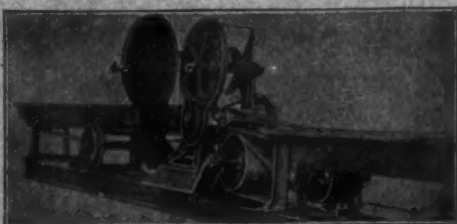
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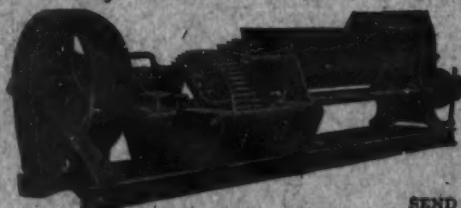
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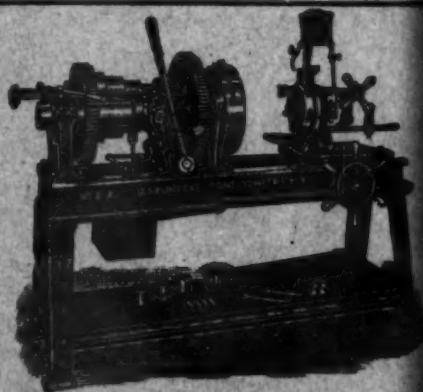
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MANUFACTURERS RECORD

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER

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BEHIND Woodrow Wilson as President of the United States in his determination to make Kaiser Wilhelm regard the rights of Americans on the high seas, and cease his deliberate murder of innocent women and children and unarmed men, as in his hellish work in sinking the Lusitania, stands every honest-hearted, true American, whether he be native-born or of foreign birth, for if of foreign birth he has sworn before the Almighty to renounce the land of his nativity and be a true American citizen. On this basis you may judge the honesty of heart and pureness of citizenship of every American. Standing by our President and upholding him will be found every atom of true American life.

GERMANY'S DOMINATION OF THE DYE INDUSTRY.

AN illuminating article on the world's dependence on Germany for dyestuffs, and the methods adopted by German banks to co-operate in the development of industrial interests in that country, will be found in this issue, written by Mr. Frederick H. Wagner of Baltimore, member A. S. M. E., who has made an intimate study on the ground during many trips to Germany of every phase of German chemistry and German financial operations in connection with dye making and kindred interests.

There is probably no other man in the United States more thoroughly informed by personal study of this situation than Mr. Wagner. His article broadly discusses the entire situation and points out what other countries are trying to do in order to make themselves independent of German dyestuffs by developing dye interests at home. The movement in this country is hopeful, but the co-operation of the great financial forces of America, as well as the National Government, are essential, for it must be remembered that in meeting this situation we are not only competing with German manufacturers, but with German financial interests and with the Government itself, for they are all united in the development and maintenance of this industry.

This question is one of profound concern to every business interest in the country, for it touches the whole system of the methods adopted by Germany for the development of its industrial interests as compared with what in many respects may be called our lack of method. This phase of the situation is strikingly illustrated in a statement in Mr. Wagner's article in which he says:

Organization is pre-eminently the correct title for this activity, because the Germans organize a chemical trade campaign in the same manner as they organize for war, appointing various committees, who constantly seek new

markets as well as raw material; who create a demand for the finished product; who establish agencies all over the world; who seek loopholes in foreign patents with the idea of making use of them if possible; who have had the German patent laws so framed as to almost exclude the foreigner, all of this being done under the careful supervision of their Government, assisted with the aid of State bounties, or subsidies, duties, etc.

The investment in this dye industry is reported by Mr. Wagner at \$400,000,000, giving employment to about 50,000 people, producing about 800 shades and combinations.

Mr. Wagner calls attention to the fact that advances received from Germany indicate that this dye monopoly will re-enter the American market as soon as the war is over, and that it will make tremendous efforts to regain lost business, being prepared to make extraordinary concessions in order to take business from their competitors.

It is vitally important, therefore, that the National Government should undertake to handle this situation and co-operate to give a fair degree of protection to this industry and at the same time prevent the dumping of German dyestuffs on the American market for the purpose of breaking down this industry, which we must develop if we would be free from absolute dependence upon Germany for dyestuffs.

CALLS THE SOUTH TO ACTION.

J. T. Holleman, W. L. Kemp, J. W. Andrews,
President. Vice-President. Secretary.
Georgia Farm Loans. Established 1870.
Atlanta Real Estate Loans. Incorporated 1903.
THE SOUTHERN MORTGAGE CO.,
Gould Building,
Atlanta, Ga., July 13.

Editor Manufacturers Record:

Dear Sir—I commend, with all the earnestness at my command, the leading editorial* in your issue of the 8th. This article ought to be published in every Southern paper, and the doctrine it proclaims ought to be emphasized on every editorial page.

It is high time the business men, the real farmers and all the practical developers of the Southern States should rise in the power of their might and wrest the situation from the hands of the politicians and short-sighted leaders, who, in the first place, have no true conception of conditions, and, in the second place, have not the courage to fight for real reform along any line.

When men who do know conditions and do offer genuine remedies attempt to go forward they always find the way blocked by these self-constituted leaders, these men who are always satisfied with existing conditions and who oppose everything looking to reform. These false leaders, unable and unwilling to point the way, hang on the heels of men who seek to develop the South, who seek to bring in new money for investment, new money for manufacturing, new money for railroad building, new money for developing the forests, the mines and the water-powers, new people to occupy our uncultivated lands, new people to show us how to grow grain and raise livestock—hang on their heels and harass and bedevil them at every turn with unfriendly legislation, with exorbitant taxes, with prohibitive licenses, and in ten thousand ways obstruct their plans and strangle the progress of the State and section.

We have here the greatest country on earth, with opportunities beyond conception, and all we need is development. But in every emergency, in every hour of storm and stress, these incompetent leaders, instead of pointing us to the true way, fall upon their knees to Congress and would have us also appeal to the Govern-

*"To the South: Do Not Make an Even Greater Blunder Than the 'Buy-a-Bale,' 'Help-the-South' Movement."

ment at Washington, and, with outstretched, beggar hands, play the mendicant and the pauper. The indolent or unskilled physician, too lazy or too ignorant to diagnose the disease of his suffering patient, drowns his cries with an opiate. So many of our leaders would still the tempest that rages about their heads at this time by placing the burden upon the National Government.

The one burning, all-important, dominating question has been, is now and will for many years be the agricultural development of the South along proper lines. Yet when some of us, not because we would harm, but because we would save our State and section, have painted a picture of our real condition, we have been criticised and our purpose misunderstood. When it was predicted by some of us last winter that there would be no material reduction in cotton acreage in 1915, these leaders and the editors of some newspapers laughed at the prediction. Nevertheless, the Government Report of July 1 had no more effect on prices than it had on the tides of the sea. These leaders and many editors said the reduction would be as pronounced that prices would soar like a rocket. On the contrary, cotton declined and has been declining every hour since. And this is a fair example of the leadership we have had in the South. These men are usually ignorant of true conditions or they have not the courage to admit the facts, face the situation squarely and seek the remedy.

In the Northern, Eastern and Western sections of this country there are thousands of people who want to go where they can find land that is productive and cheap. They would come to the South by trainloads and buy lands if they knew the facts about conditions here. But when attempts are made to have our Legislatures establish emigration departments or bureaus for the collection and dissemination of data about our lands, the political leaders and the newspaper editors throw up their hands in horror and say that our States are too poor to spend money on this sort of foolishness; that our people do not want outsiders to move into our section; that our landowners will not sell, but want to hold their lands for their children and their children's children for evermore. By what authority say they this? There is not a large landholder in the South today who is not ready and eager to dispose of a portion of his lands. How much longer are they to wait? How much longer shall we stand idle and silent while the never-ceasing tide of homeseekers rolls into Canada, into Alaska and into the arid plains of the far West?

The politicians and many editors are busy all the time discussing every conceivable question except the one most vital. But when a business man comes forward with suggestions that spell progress, he is charged with self-advertisement and with having an axe to grind. I plead for an uprising of the business men, the men of affairs, the real farmers, the true developers, in every Southern State, who shall unite in an effort to silence these false leaders, to develop our agriculture along correct lines, to advertise our section, to bring in new people from every part of the country, to strike down and stamp out lawlessness and to make us a free, prosperous and independent people. Yours truly,

J. T. HOLLEMAN.

This ringing call to the upbuilding forces of the South deserves the careful attention of men of all classes, whether they be found in the bank, in the shop, behind the plow, in the editorial chair, or in any other of the various mercantile or industrial activities of this section. It is time, indeed, for "an uprising of the business men, the men of affairs, the real farmers, the true developers in every Southern State," to awake to this situation. We have a country of almost limitless resources, a country unmatched by any other of equal area on earth, but we are permitting petty party politics, worked for

the benefit of scheming politicians, and a lack of united team work for material upbuilding to hold back the South's development. The South is in some respects doing great things, but not one-half so great as it could do under better conditions. The men of affairs on the farm, in the factory and in the counting-room, who are doing the real constructive upbuilding of the South, are being hampered by the heavy burden which retards their best work through dragging the dead body of corrupt politics, and through unwise agitations of many kinds, to which they are chained. Let us recognize the fact that the South, with all its matchless resources, is hampered by these things, and facing this situation determine to overcome them and give to this section a development commensurate with the blessings with which Heaven has so richly dowered us.

LOST GROUND THAT THE SOUTH HAS REGAINED.

THE late D. A. Tompkins, prophet of Southern progress and one of the South's foremost developers, said at a banquet in Spartanburg, S. C., in November, 1908, celebrating the coming to that city of the Carolina, Clinchfield & Ohio Railway:

The coming of this new road over the mountains is but the consummation of Hayne's scheme of a trunk line road from Charleston to Cincinnati. This brings the South back to the point in the road where she turned in favor of the institution of slavery rather than away from this big industrial development. This brings us to a point where all our fortunes were once advancing and from which they will again advance. It is the consummation of what has been three-quarters of a century of effort, and should lend new hope to every situation through the Southern States.

This is the conclusion of a notable address which has peculiar appositeness now, since the full realization of the early railroad dream has recently come to pass in the completion of the link through the Breaks of the Sandy, giving practically a trunk line road from Chicago and the lakes through Cincinnati and across the mountains to Charleston and the sea.

In the course of his address, which was printed in full in the MANUFACTURERS RECORD of December 3, 1908, Mr. Tompkins recorded the striking and not always remembered facts that before the South tied up its fortunes with the institution of slavery there was a greater industrial development in the South than in the North. As late as 1810 the manufactured products of Virginia, the Carolinas and Georgia exceeded in value and variety those of the whole of New England, with those of New York State added.

What changed this relative position of North and South was the institution of slavery, said Mr. Tompkins; not the negro, nor the slave, but the institution. "The negro has never been in the way of industrial progress as much as the Indian was originally. But the institution of slavery has had tremendous adverse influence, and this would have been the same if the slave had been white instead of colored."

Although the institution was finally fastened on the South, there was a mighty industrial and commercial spirit which opposed it. Lines of railway from Charleston were extended to Atlanta and Chattanooga, and were projected to Memphis and to the northwest, all of which territory was to be tributary to Charleston, and thence, in American ships, to the markets of the world.

While these projects were being undertaken, Robert Y. Hayne of Charleston conceived the idea of a trunk line from Charleston to Cincinnati. Brilliant in debate, Hayne attracted the favorable attention of John C. Calhoun, and largely through his influence Hayne became United States Senator and was drawn by Calhoun into the defense of slavery and to the support of laws for its perpetuation. Thus Hayne occupied the contradictory positions of leader of the industrial development forces and of the slavery forces at the same time. "If his Charleston-Cincinnati trunk line had been completed before his slavery forces succeeded," Mr. Tompkins declared, "then commerce, with the free institutions of the Northwest, would have dominated and slavery would have been abolished by gradual process, and war would have been avoided. But Hayne succeeded best in his defense of slavery, and the ultimate

results were war, reconstruction and all similar misfortunes which have befallen the South, including to this day the solid South in politics."

A profound student of history and current affairs, with a calmly judicial temperament and a soundness of judgment few men possess, Mr. Tompkins' analysis of a situation was always impressive and his prophetic vision an inspiration. While lamenting the awful loss of human lives, of time and of treasure which the war entailed, it is the part of the generation of today to rejoice that it has been possible to regain the point in the road to industrial development which it occupied before, as Mr. Tompkins has pointed out.

Conditions are fortuitous. It only remains for the people of the South to measure up to the opportunity that lies before them. With courage, calmness and patience to handle with wisdom every problem that confronts the South, it should be possible for a mighty, a steady and a permanent advance to be made all along the line.

"HE GAVE ALL HE HAD, AND HIMSELF, TO THE PUBLIC."

PECULIARLY pathetic was the death at Denver last week of Dr. Joseph Austin Holmes, director of the Federal Bureau of Mines, for it is declared by his associates at Washington that he was a victim of overwork, a martyr to his devotion to his duties. He had been at the head of the Bureau of Mines from the beginning of that department, and was the originator of the "safety-first" movement, the shibboleth of which has become a national slogan in all departments of industrial activity. He had been for years in charge of the Government investigation of mine accidents, and by his work in behalf of the miners' safety had greatly reduced the death toll among that great army of underground workers. But his insistence on sharing the perils that his rescue crew must face, going with them into places that tried the endurance of the hardest of men, proved too great a tax on his vitality, and some months ago tuberculosis developed and could not be shaken off.

While his death is a loss which his country may well mourn, there is in his life of devotion and achievement an inspiration to his countrymen everywhere, and particularly to those of the South, for Dr. Holmes was essentially Southern. All too short as his life-span was, Dr. Holmes had lived long enough to furnish a fine example of how a Southern man may apply his education to problems of national moment and work them out with advantage to all the nation. Born in South Carolina 55 years ago, he graduated from Cornell University, and afterwards became professor of geology and natural history at the University of North Carolina. Subsequently he was State Geologist of that State from 1901 to 1904, which position he left to join the forces of the United States Geological Survey, where he remained to the day of his untimely death.

An eloquent, touching tribute to the life work of Dr. Holmes has been written for the MANUFACTURERS RECORD by Dr. David T. Day, who knew him well as a coworker and a friend. An epitome of his life and a fitting epitaph for his tomb is the concluding sentence of Dr. Day's "appreciation," printed elsewhere in this issue:

"He gave all he had, and himself, to the public."

GRAIN A HELP TO COTTON-GROWERS.

MESSRS. HERKLOTZ, CORN & CO. of 15 William street, New York, referring to the statistics in the MANUFACTURERS RECORD of last week as to grain production in the South, say:

In this connection it appears that it is not sufficiently appreciated by the outside public, particularly those interested in cotton, what this large increase in the value of the grain crop signifies to the holder or producer of cotton. Of course, they will be in a better position to market their cotton crop, owing to the excellent returns received by them from grain.

AN ANSWER TO SOME QUESTIONS FROM THE COLUMBIA RECORD.

THE Columbia (S. C.) Record, taking exception to the interpretation put upon one of its editorials by the MANUFACTURERS RECORD last week, asks the question:

But what was the MANUFACTURERS RECORD doing last summer to bring the people of the South out of the fog and into the clear light? If it assumed any leadership at that time, even its powerful voice did not call the stampeding men of the South to a realization of the fact that they were more frightened than hurt.

Answering that question, we may say that the MANUFACTURERS RECORD week after week last summer and fall was urging the South not to become hysterical in the handling of its cotton; urging the bankers to do all in their power to take care of the cotton crop; urging business men throughout the South to establish warehouses as rapidly as possible, and make warehouse receipts collateral good in every bank in the country. It pointed out week after week the fact that it was impossible to market the great crop of the year at a time when American cotton mills could not secure money with which to buy cotton, and at a time when the financial world was so upset by the war that foreign spinners were for months unable to buy cotton and were compelled to use up the stock which they had on hand.

Through all of the campaign of last summer and last fall the MANUFACTURERS RECORD was pleading with the South not to be frightened, but to meet the situation as calmly as possible and recognize that a world-wide cataclysm was upon us, and that courage and strength and manhood were needed by every business interest in this country. These were some of the things the MANUFACTURERS RECORD was doing with all the energy it could bring to the work. And then through the fall and winter unceasingly it warned the South against raising another large cotton crop. It urged that every business man in this section should recognize the folly of advancing money to cotton growers unless they pledged themselves to raise all of their foodstuffs at home and to reduce their cotton acreage to such an extent that even a fairly large crop would be impossible. It pointed out with all the emphasis at its command that to ask the country to buy a bale of cotton at ten cents a pound when it was selling in the market at five and six cents a pound was a plea which put the South in the position of a beggar. It fought with whatever energy it possessed the placards distributed all through the North and West and seen in almost every business-house window and in all the great hotels of the land—"Help the South!"

That the unwise "Buy-a-Bale-at-Ten-Cents" movement created throughout the North and West a false impression as to the South, and that it made every business man in those sections believe that there was no use trying to do business in the South because of its poverty, no longer admits of any question. Time has demonstrated the correctness of every position the MANUFACTURERS RECORD took last year on the cotton situation and on the supreme necessity of raising foodstuffs enough so as to be absolutely independent and be no longer required to buy a dollar's worth from other sections. The South has increased its food crop greatly, but it could have doubled the increase if its people had unitedly worked for that end.

In further comment on the subject the Columbia Record says:

The MANUFACTURERS RECORD twits us with our appeal to the Southern cotton leaders "to start something." The portion of our appeal above quoted, taken in connection with our consistent attitude on this proposition, does not justify the MANUFACTURERS RECORD in taking too seriously what, in its elephantine effort at playfulness, it considers our threat to "spank" England. The phrase is theirs, not ours.

The MANUFACTURERS RECORD is correct in its main proposition that the people of the South must not be unduly stimulated into a cotton frenzy, and that is not the purpose of the Columbia Record. But it was our conscientious belief that if we wait until September, as was the case last year, there will then be sporadic and excited efforts at organization which would end in disaster.

The Columbia Record has "started something," we take pleasure in informing the MANUFACTURERS RECORD. This something is a compact organization of leading Southern thinkers. Calmly, deliberately, with their minds open to

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conviction through reasonable argument, they will endeavor to get at a businesslike solution of this vexing problem which the MANUFACTURERS RECORD professes to consider so lightly.

We send out to the great Baltimore periodical of push and progress the Macedonian cry, "Come over and help us." Or, if the lights by which we are guided are but the evanescence of the ignis fatuus of a fantastical delusion, we appeal to our high-brow friend to give us the chiaroscuro of truth, etched by its wisdom and experience.

But give us something. Give us pabulum for our flapdoodle. Give us leadership that will be accepted and trusted in the South and will be effective in our dealings abroad.

It should be fully understood that President Wilson and those about him are as cognizant of the situation in regard to cotton as it is possible for the Columbia Record or the scheming politicians who are seeking to arouse indignation against Great Britain can possibly be. Every movement that is being worked up to make more difficult the negotiations between this country and Great Britain is unwise in the extreme, and only hampers the President in his effort to secure the largest possible liberty for our cotton. But such suggestions as those that have been made, that unless Great Britain yields entirely to the wishes of the cotton growers and makes it possible for Germany to secure cotton, ignoring every important factor in the situation except our own selfish desires to be able to sell cotton wherever it is wanted, regardless of world conditions and regardless of the fact that the German navy has been too cowardly to contest the supremacy of the sea and thus open its ports to trade if it could master the sea, only begets the situation and reacts on the South. It simply creates false ideas and false issues, and again makes the country at large think of the South as it was forced to think last year when no man could walk the streets of Northern and Western cities without reading the sign, "Help the South!"

In view of the fact that our exports of cotton to foreign markets for the last fiscal year are only 10 per cent. short of what they were for the preceding fiscal year, we can readily see that Great Britain has been a liberal buyer of our cotton.

Moreover, as cotton is an important item in the manufacture of ammunition, we might as well expect that England would permit the free shipment into Germany of guns and powder as to permit the shipment of cotton.

ANOTHER WAY OF LOOKING AT IT.

SUPPOSE I were to be a spectator to a gun fight between two of my neighbors. And suppose my neighbors didn't have enough ammunition to prolong the fight indefinitely, and one of them called upon me to sell him a new gun and a box of cartridges. And suppose I bargained with him and sold him my gun and my cartridges. Would I not be an accessory to the crime which followed? And isn't the United States accessory to the butchery in Europe?—The Plymouth (N. C.) Independent.

But suppose a burglar, after carefully studying the location and defenseless condition of your neighbor's house, should go thoroughly armed and undertake to murder your neighbor and all his family because, living in peace, they had not prepared to protect themselves against burglars, would it not be your duty, if you had a gun, at least to give your neighbor the chance of protecting himself even if you are not willing to risk your own life at the job? Wouldn't you be more an accessory to the murder of your neighbor and his family if you refused to co-operate with him by letting him have your gun than if you stood off and said, "It is none of my business; let the burglar kill whom he may?"

FIGURES THAT ARE SURPRISING AND ENCOURAGING.

COMMENTING on the statistics of grain production published by us last week, the Journal of Winston-Salem, N. C., says:

The most surprising and encouraging figures ever published on the South are given by the MANUFACTURERS RECORD this week.

THE "LEE AND JACKSON" HIGHWAY.

REFERRING to the suggestion made by the MANUFACTURERS RECORD that there should be established from Washington through the central South an unbroken good road to be known as the Lee and Jackson Highway, Mr. L. P. Dickie, secretary of the Central Florida Highway Association, wires from Tampa, under date of July 18, to the MANUFACTURERS RECORD as follows:

The Lee and Jackson Highway should be a reality. I suggest for the route Washington, Richmond, Wilmington, Charleston, Savannah, Brunswick, Jacksonville, Palatka, Sanford, Orlando, Kissimmee, Lakeland and Tampa.

I can secure the support of needed men, and would suggest the calling of a meeting in Lakeland about the middle of September, when the Central Florida Highway Association meets, the greatest aggregation of good-roads men in Florida. You should request the Governors of the States through which this road would pass to endorse and appoint commissioners to be at the meeting. Call on me for help and I will get support for it.

The MANUFACTURERS RECORD would suggest that the Governors of the States through which this road would run should seek to awaken an interest throughout their States in this great project as did the Governors in the West and in Tennessee and Kentucky and other States, working in the interest of the Dixie Highway. While the suggestion of the MANUFACTURERS RECORD in regard to the Lee and Jackson Highway was that it should run from Washington through Richmond, Raleigh and Columbia, in order to pass the historic capitals of States with which Lee and Jackson were so intimately identified as the representatives of the Confederacy, Mr. Dickie suggests that the road should run from Richmond by Wilmington, Charleston and Savannah. It is well that there should be a rivalry for such a road.

That a great national highway between Washington and the South will be built admits of no question, but there may be a question as to what cities it will pass through, and there should be a vigorous and active rivalry between the cities of the South in securing the building of this road and in capturing it for themselves. It may come about that, as in the Dixie Highway project, there will be parallel roads or a road system instead of a single road; nevertheless, from Washington to the far South there should be a great unbroken, splendidly-built highway as a memorial to two of the greatest men who ever lived—great in war, but greater in superb personal character, type of the highest that Anglo-civilization has ever produced—Robert E. Lee and "Stonewall" Jackson.

MARVELS OF FREIGHT INCREASE IN OKLAHOMA OIL FIELD.

HOW the abundant yield of oil from the deep Bartlesville sands has made the Cushing-Oilton field of Oklahoma a dominant factor in fixing the price of oil throughout the world is interestingly told in a letter by a correspondent of the MANUFACTURERS RECORD, published elsewhere this week.

This "wonder field," our correspondent says, is not more than twenty miles long by four miles wide, and yet it is now producing 60 per cent. of the high-grade oil of the world.

Records of various kinds have been broken, and there is a degree of activity of which, as is pointed out, no adequate conception can be gained without a personal visit to the field.

One of the most striking features, however, and one for the full comprehension of which no technical or on-the-ground knowledge is required, is the effect of the oil-production boom on the business of the railroads. While five pipe lines carry 75,000 barrels of oil daily to refineries in and outside the State, long trains of tank cars are hauled daily across the State destined for points all over the United States. The inbound shipments of oil-field materials and supplies, including steel for tanks, is almost as great as the volume of outbound business, as evidenced by the fact that one oil company had thirty trains of steel en route to Oilton at one time, while another had 300 cars of steel. One railroad company now

has a quarter-million dollars' monthly business at a station where there was not even an agent in 1914; at another station this company has increased from \$2500 a month in 1914 to over \$50,000 a month for 1915, while at a third station the business went from \$1500 a month to \$125,000. In the railroad yards at Oilton, a town that did not even exist prior to February 11 of this year, the freight receipts now amount to 1000 cars a month.

AUTOMOBILES AND RAILROAD CROSSINGS.

PRESIDENT FAIRFAX HARRISON of the Southern Railway Co. has issued a circular-letter relative to the danger existing when automobiles cross railroads at grade. He says that there were 69 automobile accidents at railroad crossings on the Southern Railway's lines in the South during the company's year, which ended June 30. There were 12 persons fatally injured, while 58 others were more or less severely hurt. Continuing, he remarks:

Without seeking to avoid just responsibility for what the officers or employees of the railroad do or omit, but recalling that a railroad employee whose carelessness causes an accident is, in the public interest, subject to discipline which affects his livelihood, it is probably fair to say that a large proportion of these accidents happened solely through the carelessness of the drivers of automobiles or their lack of experience in dealing with vehicles at high speed. * * * I appeal to the public generally for such co-operation in avoiding these serious and distressing accidents. In practically all cases they can be, and in most cases are, readily and easily avoided by the automobile driver acting upon the familiar warning to stop, look and listen at railway crossings. * * * The ideal of safety will be accomplished only when all grade crossings are separated. In this respect the Southern Railway Co. is doing something every year and as much as its resources and other obligations make possible. * * * I appeal confidently for the counsel of every responsible man and woman in the South, whether or not he or she drives an automobile. Words of caution and common sense around the family dinner table can have more influence and can save more lives at railway grade crossings than all the warning whistles ever blown by a locomotive engineer.

Mr. Harrison utters some pointed truths. Undoubtedly more accidents at grade crossings are caused by the negligence in some form or other of the automobilists than by any fault of the locomotive engineers. If the public, as requested, will use common caution when approaching railroad crossings, they will save more lives than can the companies with all their warnings and admonitions.

A SOUTHERN FARMER'S SOUND SENSE.

J. G. MANSFIELD of Spartanburg, S. C., is evidently a farmer who thinks as well as works. He writes an interesting letter, published elsewhere in this issue, in which he shows a knowledge of the conditions that have made his section prosperous, while at the same time recognizing the means for making the country more prosperous. "Our people are yet so set in their ways—growing cotton," he says. "We need more farmers to grow grain and raise livestock."

Mr. Mansfield's letter is worthy of careful thought by Southern farmers and their advisers.

Is it a strained conclusion that there may be a relationship between the progressiveness of Mr. Mansfield and the fact that he is an enthusiastic reader of the MANUFACTURERS RECORD?

A SUGGESTION TO FLORIDA PHOSPHATE OPERATORS.

IN writing to the MANUFACTURERS RECORD Mr. E. E. Ropes of Deland, Fla., says:

You might do Florida lots of good if you persuade the phosphate folks to sell to us at as low prices as they sold to the Germans. I think 20 tons of floats should be applied to each cultivated acre in the State.

The World's Dependence on Germany for Dyestuffs

WHAT AMERICAN MANUFACTURERS CAN DO TO MEET CONDITIONS THAT GERMAN BUSINESS EFFICIENCY ESTABLISHED YEARS AGO.

By FRED H. WAGNER of Baltimore, Member A. S. M. E.

[Mr. Wagner is chief engineer of the Bartlett Hayward Company of Baltimore. He writes from broad personal study of his subject in this country and abroad, and his article is an authoritative presentation of conditions affecting the highly important dye industry.—Editor Manufacturers Record.]

No. 1.

The present war in Europe, more than any other happening during the last decade, has called the attention of the American manufacturer to his absolute dependence on Germany for many of the essentials required to conduct his business with profit. This condition is an established fact, and not a theory; consequently it is essential to inquire into the conditions which have made this state of affairs possible and to seek a remedy which would make a repetition impossible. This condition does not prevail only in the United States, but also in all other countries which have not taken advantage of their natural resources and which have permitted Germany to obtain control of the markets supplying their requirements.

In no other branch of industry has this condition been more acute than in that dealing with coal-tar products, and here we find almost the entire world dependent upon Germany to supply the necessary articles so urgently needed. As an example of what has been accomplished in this particular I would refer to the conditions existing in England, the birthplace of the coal-tar color industry, but no longer its abiding place, from where, due to the foresight, perseverance and manufacturing conditions of the Germans, who soon saw the great possibilities of this industry, it was transplanted to German lands, and where it has been fostered and developed until today it stands pre-eminent in the field of chemical manufacture.

The English manufacturer is in the same boat with us, and last winter investigations were set afoot in England with a view to determine upon ways and means of making that country independent of Germany as regards coal-tar products. These investigations led to many humiliations on the part of the investigators, when it is remembered that they originated but lost the industry, and these humiliations can best be expressed by repeating the words of Mr. Walter Reid before the Royal Arts Society of London. He said:

"The British manufacturers are an untrained mob as compared with an organized German army."

Organization is pre-eminently the correct title for this activity, because the Germans organize a chemical-trade campaign in the same manner as they organize for war, appointing various committees, who constantly seek new markets as well as raw material; who create a demand for the finished product; who establish agencies all over the world; who seek loopholes in foreign patents with the idea of making use of them if possible; who have had the German patent laws so framed as to almost exclude the foreigner, all of this being done under the careful supervision of their Government, assisted with the aid of State bounties, or subsidies, duties, etc.

Owing to the large capital invested and the employment of many thousands of people in this industry in Germany, I feel that it may be of sufficient interest to the general public to give a short history of the development of this most wonderful art.

The first color discovered as emanating from coal tar was mauve, or a sort of violet, this discovery in 1856 being credited to Perkins. The same year saw the production of magenta and fuchsine. These discoveries excited general interest in England, and it was not long before a small factory for the production of these colors was established, but this first attempt ended in failure. The discovery of water, or soluble, blues followed in 1862, while 1863 saw the production of Hofman's violet and Bismarck brown, followed by naphthol or martius yellow in 1864, and nigrosines in 1867.

It was at this period that the Germans recognized the advantages to be secured in the establishment of the dye industry, and they soon applied their usual patient perseverance, combined with intelligent re-

search, to the advancement of these crude beginnings, with the result that between 1875 and 1878 such products as orange, red, malachite green, chrysoidine, scarlet, metanil yellow, methylene blue and eosines were placed on the market. These discoveries led to still deeper investigations, and we find that after 1880 further results were rapidly secured. In 1883 they produced auramine, in 1884 tartarazine and benzo-purpurine, in 1885 congo red, benzo-azurine and naphthol black; in 1886 diamine red, and in 1887 rhodamine. These discoveries soon placed the German dye industry on a firm foundation, and the present prosperity of the manufacturers can be directly traced to this period. The early nineties record the discovery of direct black for cotton, and acid and chrome blacks for dyeing wool, soon followed by synthetic indigo.

Even after Professor von Baeyer, after many years of diligent research, succeeded in analyzing the complicated chemical constitution of indigo dye, and by which analysis he was able to point out a possible synthetic process for its production, we find that the Badische Aniline and Soda Fabrik spent 20 years in persevering research, employing a group of eminent chemists and engineers, before they had secured a satisfactory commercial method for producing this most important dye-stuff, with the result that at present but little natural indigo is used.

Not only were the above colors produced, but some 800 shades and combinations followed, and all of this is today in the hands of the German manufacturers, their investment amounting to something more than \$400,000,000, while giving employment to approximately 50,000 people.

The production of colors was soon followed by that of pharmaceutical products, such as phenacetine, antipyrin, etc., as well as by perfumes, all so fully protected by patents that individual fortunes were made by quite a number of manufacturers.

From this it can be readily seen that the German manufacturers soon realized that all of their industrial progress in this line was necessarily dependent upon scientific research, and that the final result would depend absolutely upon an adequate supply of by-products, with the result that they soon established by-product recovery coke ovens in the immediate vicinity of the blast furnaces in order to secure the necessary products emanating from the distillation of coal, reducing the cost of producing these raw products, such as tar and benzol, by utilizing the surplus gas for heating the coke ovens and for supplying power for gas engines; these latter factors, more than any other, led to the remarkable development of both the coke ovens and gas engines of today.

This foresight on the part of the Germans is in remarkable contradistinction to our own, when we remember that in 1913 the coal consumed in the United States in the manufacture of coke amounted to 69,239,190 short tons, producing a total of 46,299,530 tons of coke, of which amount only 12,714,700 tons were produced in by-product recovery ovens, while 33,584,830 tons, or 72.5 per cent. of the total, were produced in the wasteful beehive oven, the latter giving back nothing but coke; had this latter amount of coke been produced in by-product ovens we would have been richer by approximately 627,480,162 gallons of tar, 97,800,000 gallons of benzol, 23,400,000 gallons of toluol, 11,700,000 gallons of xylol, and 13,100,000 gallons of solvent naphtha.

It is readily seen from the above figures that we could supply sufficient raw material for all our needs, but at the present moment we are almost entirely at the mercy of Germany for our coal-tar dyes, antiseptics, drugs,

essential oils and aromatic substances, and very many of our industries are dependent upon these dyestuffs for the carrying on of business, due to the fact that nearly all rival dyes have been displaced in recent years by the coal-tar product, as the latter combines qualities of fastness, ease of application, as well as a great variety of shades and a brilliancy not known with the natural dyes.

America annually consumes about \$15,000,000 in these artificial dyestuffs, home production supplying about one-fifth of this amount, but here again we are compelled to rub elbows with the Germans, because this domestic production is based chiefly upon the use of foreign materials, only a very limited portion being made directly from American crude coal-tar compounds.

The production of dyes from coal tars may be classified under three operations:

I. Products secured from the crude coal tar by distillation.

II. Products secured from product I by chemical transformation, but which are not dyes.

III. Dyes secured from product II.

An examination of Germany's foreign trade figures for 1913 shows the following for these three products, all figures being given in metric tons:

Product	I.	II.	III.
Imported into Germany	67,501	673	3,238
Exports from Germany	342,893	16,311	163,874
Excess of exports over imports	275,392	15,638	160,636

Product II is classified as anilin oil and salt; naphthol and naphthylamin; anthraquinone, nitro-benzol, toluidin, resorcin, phthalic acid and other products, while product III combines anilin dyes, anthracene dyes, alizarin red and indigo. Product II comprises the material imported into the United States for the production of the few dyes made here.

These figures without doubt clearly show that Germany controls the markets of the world as regards this product, and the reasons for this control are due to the fact that although the growth of the industry was very slow, the field became a very complicated and inter-related one, as a great proportion of the various products are dependent upon or are even produced by the admixture of one or more other products, and in many instances one product has but little value without the use of others; the technical development came first, but this was soon followed by industrial and commercial developments, and today the coal-tar industry is a conglomerate enterprise consisting of many separate and distinct parts, but so closely correlated that commercial success depends upon a domination of the whole.

Germany possesses 22 factories given over to this industry, but not one of them is independent of foreign sources for the raw material required in making their individual articles. France possesses 11 factories; Great Britain 11, Austria-Hungary 4, Switzerland 4, Holland 2, Russia 2, Belgium 1, Greece 1, Italy 1, while the United States has 9, but unfortunately, like all other countries except Switzerland, we are dependent upon Germany to furnish us the intermediate product, No. II, in order that we may produce the few dyes made here.

The development of this industry saw the abandonment of 11 plants in Germany and one each in Austria, France, Switzerland, Belgium and Great Britain, while 14 plants were absorbed by others already in existence.

Our domestic production of dyestuffs is therefore based chiefly upon the importation of product II, or of partially complete color compounds, and since the outbreak of the present war the import of these essentials has been seriously interrupted, with the result that some of the more important dyes are unobtainable, and the prices of such as were obtainable have increased by from 25 to 50 per cent. The few concerns in this country producing dyes are doing everything possible to meet the demand, but they are seriously handicapped by inability to secure the essential intermediates, and, in consequence, some of the larger consumers have erected emergency plants at considerable cost in an attempt to produce those colors which are absolutely necessary.

These establishments supply nearly a hundred different colors, but only by the admixture of the various intermediate compounds secured from abroad, and every effort in the past to advance beyond their present bounds was quickly checked by the action of the Ger-

mans in underselling their wares. The success of this underselling campaign can be realized when it is stated that the German producers are so thoroughly organized and are so accustomed to act in unison in an endeavor to further their common interest that it has been extremely difficult for our individual domestic manufacturers to try to meet this sort of competition.

The question naturally arises as to how it is possible for the Germans to conduct such commercial campaigns, and the answer lies in the conditions which surround the German inventor, discoverer or manufacturer, and which conditions seem hardly realizable in this country under the present relations existing between our banking and our commercial enterprises. As an example of these foreign conditions, but one need be cited to make the matter clear; all German banks of any consequence have associated with them highly-trained technical experts, whose sole business it is to examine and report to the managing head upon the merits of any invention or manufacturer's claim for credit. For instance, an inventor may have made a discovery which he wishes to place on the market, but for which he lacks funds; upon applying to the bank for a loan, he is turned over to this technical expert for an examination of his claims, and, if these appeal to the expert, he so reports to his bank, with the result that the needed money is usually forthcoming. If the invention or discovery should be of such importance that its exploitation would promise to add to the welfare and richness of the nation as a whole, the Reichs Bank is communicated with, and the latter's expert takes a hand in examining into the claims of the applicant; if his report is satisfactory, a portion of the development money is furnished by the latter bank, with the result that the Federal Government takes an interest in the subject and retains it during the fruition of the project. In this manner the inventor is aided, and the nation as a whole receives a benefit, even though possibly an indirect one, from the child of his brain.

(To be continued next week.)

Southern War Orders Increasing.

It is claimed that war orders aggregating more than \$10,000,000 have been placed with Baltimore manufacturers for various materials, including cotton duck, tubing, castings and other specialties and ammunition for general war supply purposes.

Among the Baltimore firms reported to have received orders for war supplies are the Mt. Vernon-Woodberry Cotton Duck Mills, Poole Engineering Co., Baltimore Tube Co., Black & Decker, P. Kennedy's Foundry, Davison Chemical Co., Wm. E. Hooper & Sons Company and the National Enameling & Stamping Co.

In addition, indications point to large orders coming to various Southern firms when negotiations now pending are consummated. Among recent rumors covering the placing of other war orders are the following:

A \$9,000,000 contract to the Wm. J. Oliver Co. of Knoxville, one of the leading manufacturing concerns of the South.

The New York & Hagerstown Metal Stamping Co., Hagerstown, Md., expect to secure order for making metal stampings for shells.

The Huntington Alloy Co., Huntington, W. Va., is making preparation to start the manufacture of cases for shrapnel shells.

The Hice Manufacturing Co., Johnson City, Tenn., received a large order from the British Government for walnut lumber to be used in the manufacture of stocks for army rifles.

The Lamb-Fish Lumber Co., Charleston, Miss., is shipping 200 cars of hardwoods, consisting of oak and gum, to Great Britain.

These orders and rumors of orders indicate the wide range of materials that are needed to fulfill the requirement of European war demands.

Blue Ridge Power Co.

With plans for developing a water-power property and having an authorized capital of \$700,000, the Blue Ridge Power Co. of Tuxedo, N. C., has been incorporated. J. O. Bell of Tuxedo, S. B. Tanner of Charlotte, W. S. Montgomery, John A. Law and George E. Ladshaw of Spartanburg are the incorporators.

As Viewed by One of the South's Foremost Ministers

By REV. LEN G. BROUGHTON, D.D.

[The Rev. Len G. Broughton, D.D., known throughout the North and West as well as throughout the South as one of the foremost ministers of this section, in the following article expresses, with the emphasis which always characterizes his well-matured views, his opinion in regard to the efforts that are being made to arouse antagonism in the South to Great Britain because of the ability of that country, through its command of the seas, to keep cotton out of Germany.—Editor Manufacturers Record.]

It is hard for me to understand the effort of some public men in the South who seem to feel that the salvation of the country depends upon forcing England and her Allies to stop holding up their cotton while on its way to Germany or to her Allies. Somehow they seem unable to discriminate between the ethic in England's policy of search and hold-up of that which is contraband and manifestly on its way to Germany or her Allies, and Germany's policy of submarine murder without search or chance of life even for American citizens though they travel on unarmed merchant vessels. One is lawful and the other is highway assassination.

England has a perfect right to search and hold up stuff on its way to Germany which will aid Germany in carrying on her war of broken treaties and damnable brutality and insatiable greed for other territories, such as little peace-loving Belgium. England has a legal right to blockade Germany if she can do so, and moreover, she has a moral right—the same moral right that I would have to keep an assassin from my home, and legally Germany has the right to blockade England if she can do so in a legitimate way. She has a right to prevent England from receiving anything from us that would help her.

The trouble with Germany is, she cannot exercise her right in this regard. Her ships of protection are all locked up by England's great navy, and the only thing she can do is to practice her illegal and immoral method of submarine assassination.

Any clear-minded person is able to see the difference. England's policy is legitimate and the practice of all wars with regard to the blockade of the enemy.

Germany's policy is illegitimate. It does not provide for the safety of innocent passengers, but without a word of warning hurls them into eternity.

There can be no defense at all for such conduct, and no effort to shift the responsibility is going to succeed with fair-minded American people. We know right

from wrong in this country. We know the methods of justice and equity, and we are not going to lend our influence in the slightest to such methods as Germany has been practicing in this war.

I am afraid that the cry from many in the South is purely for political ends. As I have gone up and down the country I find that the rank and file of the people, including the very best business men, are beginning to see through the situation and openly take their stand against Germany's actions.

A man, however, who desires to play politics hopes to arouse sentiment and to curry favor with the cotton interests, because cotton is being kept out of Germany, but they are going to find that that effort will fail. Sheer prosperity itself, if nothing else, will defeat it. In just a few months more, when peace gets in sight, this country, including the cotton interests, is going to experience the greatest prosperity it has ever seen. The whole of Europe practically will have to be rehabilitated, and America is the only country to do it. Europe will demand in the near future everything that we can produce, even our men. Anybody can see this at a glance.

But aside from this commercial aspect, England and her Allies are not responsible for this war. I was in England for three years before the war and six months after the war actually began. I was in close touch with the people who manage things, and I know that Germany forced this war, and I know further, if she should by any chance succeed in her methods, which are so absolutely diabolical, it would mean the end of democracy in Europe, if not in the world, until the world got ready to fight another bloody war.

The only way for peace to abide is to disarm and bring to repentance—such repentance as will never be forgotten—the rabid, war-menacing nation of Europe, which has held Europe in a spell of fright for the last 40 years.

There is no use whining "peace" until this is done.

A Song of Prosperity from East Tennessee.

[Special Correspondence Manufacturers Record.]

Knoxville, Tenn., July 19.

The calamity howler or hard times cryer will have to hunt another territory than East Tennessee if he makes a success during the next three months and from that time on.

Within a radius of 100 miles of Knoxville the business outlook, the contracts signed and those to be awarded, with money in sight, show that real prosperity has visited Knoxville and East Tennessee, and is here to stay.

The Wm. J. Oliver Company of Knoxville has secured a \$9,000,000 contract with the British Government to make shrapnel shells. T. P. Roberts, superintendent, left for New York to superintend the purchasing of \$100,000 machinery for this plant. This will give additional employment to more than 1000 men.

The American Zinc Co. began operation with the increased plant at Mascot, with a capacity of 1800 tons daily, and is rebuilding its Rosebery plant, that will have a capacity of 500 tons daily.

The Southern Coal & Coke Co. of Knoxville has just closed the contract for 220,000 tons of coal to be shipped to Ohio, going into a district that has heretofore secured its coal from the Pittsburgh district.

The Aluminum Company of America, located at Maryville, 14 miles from Knoxville, is building an addition to its plant.

The Fulton Company of Knoxville is erecting three buildings addition to its plant, at the cost of \$50,000

for the buildings alone, to say nothing about the machinery.

The Southern Extract Co. has installed machinery and addition to its plant at cost of \$100,000, increasing its capacity more than 80 per cent., and is now working its force in three shifts, 24 hours per day.

The marble mills in Knoxville are now working a night force to fill orders. A quarry near Neubert Springs, which is said to be a rich marble field, but has not been worked owing to transportation, is now being opened up and a spur track built to the quarries.

The foregoing work is now in progress, while the city of Knoxville is spending \$200,000 for street paving, sewers and schoolhouses.

Knox county this week received for its road bonds \$500,000, which was deposited in the local banks subject to check of the Knox County Good Roads Commission, which will award its first contract for the repair and rebuilding of the roads on July 28. In the surrounding counties bonds have been issued for roads and schoolhouses by the county courts, so business promises to be far the best of any midsummer and fall.

Fully \$3,000,000 will be expended this summer and fall and next year on the roads in East Tennessee and Eastern Kentucky, which means the construction of the Dixie Highway via Knoxville from Chicago to Miami, Florida.

The farm crops in Knox county and East Tennessee are more plentiful than ever before. A dinner can be purchased on the Knoxville market at less cost than it has been in a number of years. With the work for the laboring classes there is no doubt that the fall of 1915 will be a record-breaker in Knoxville and East Tennessee.

R. P. WILLIAMS.

How South Carolina Is Warehousing Cotton

By JOHN L. McLAURIN, State Warehouse Commissioner, Columbia, S. C.

In response to your request for an article on the State warehouse system for handling cotton, I beg to say that your State of Maryland has had an experience of nearly one hundred years with State tobacco warehouses, and I investigated that system before drafting the South Carolina law. The general principle upon which such legislation is based is that it is a function of government to do for the people that which they are unable to do for themselves individually. All of the experiments made by the Farmers' Alliance, Union, and kindred organizations in establishing a warehouse system which would enable us to market our crop gradually have been failures, not only on account of the difficulty of securing the co-operation of millions of people scattered over 13 States, but because of the fact that there is a cloud on the title of every bale of cotton produced in the South by reason of the crop mortgage and lien system, and it was found that the receipts were not valuable as a collateral except in the locality where the warehouse was known.

There was another serious defect arising from the substitution of cotton. A warehouseman would sometimes sell the cotton in his charge and substitute other cotton for same. This would work no hardship if cotton equally good was returned, but it was easy to practice fraud by replacing the cotton with cotton of a much lower grade. The man in New York or Boston, on a declining market, was always in danger of loss from this cause.

The State of South Carolina, by declaring that no statutory lien shall avail against a State warehouse receipt, has cured this defect in the title. The State not only guarantees the title and the delivery of the cotton on the receipt, but also guarantees the weight and the grade of the cotton. In other words, the lender is sure that he will receive on demand the identical bale of cotton upon which the loan is made.

I have been aided greatly in my efforts by Mr. W. P. G. Harding of the Federal Reserve Board. He gave me letters to lending financiers in New York, and upon my explaining the system to them, without exception they said that the State warehouse receipt put cotton into the form of a negotiable security which was thoroughly satisfactory to them as a collateral. I am having no difficulty whatever in securing money on cotton stored in State warehouses from New York banks at a rate of interest to the individual farmer not exceeding 6 per cent. Of course, all cotton in State warehouses is kept fully insured, and the borrower must maintain a margin of at least 20 per cent. The advantage as a collateral is that the holder of this receipt can send it to me and request the delivery of the cotton, and I deliver it at once upon the receipt. He doesn't have to sue his note or do anything else but sell the cotton.

Now, the benefits to the farmer are:

- 1st. Cheap storage.
- 2d. Cheap money.

I am encouraging each community to build warehouses as cheaply as possible. I am advising a wooden frame with a dirt floor and logs to put the cotton on, with the sides and roof of the best quality of corrugated iron. A warehouse of this description, holding 1000 bales of cotton, can be completed at a cost of about \$700. The State takes this house over and appoints a manager, weigher and grader. The manager issues a temporary receipt, and, after the cotton is weighed and graded, makes a report to this office, which is kept on file, and upon this report I issue the State warehouse receipt. The cost to the farmer for storing in one of these warehouses is three cents per bale per month to the States; the insurance and other charges we find to average about five cents a bale a month; so that eight cents per bale per month covers the entire cost of such storage. The standard warehouses last fall charged as high as 40 cents a bale a month, and very few of them

less than 25 cents per bale per month. You can readily see that if a man has to pay, say, 30 cents a bale a month storage, and then 8 per cent. discount (which is the cheapest that any farmer has ever got money in South Carolina, so far as my knowledge goes), that it costs so much to store cotton and the receipt under the old system was so difficult to obtain money upon that our planters would sell their cotton for whatever it would bring.

The Legislature last winter authorized me to make direct sales of cotton to the manufacturers from these State warehouses. Owing to the European war, I have not been able to establish sales agencies abroad, but I have in mind doing so at the first opportunity. The greatest burden that there is on the cotton planter is the six or eight middlemen, each getting a profit between the farm and the mill. This is a great burden on farmer, manufacturer and consumer. Of course, the farmer, being the producer of the raw material, feels it most.

Another evil that the State warehouse system is designed to correct lies in the undergrading of cotton. The Federal Government has established by law standard grades, but when the farmer sells his cotton all of the grading is done by the purchaser, and when you consider that at least 60 per cent. of the crop is made by negroes and white tenants who are ignorant, you can imagine how badly they have been imposed upon since the war.

I have a bill to present at the next session of the General Assembly, and practically the same act is before the Georgia and Alabama Legislatures now in session, to formally adopt the United States standard grades, which would make the improper grading of cotton a violation of the law of weight and measures. It also provides for licensing the graders by the State Warehouse Commissioner after an examination, and with the power to revoke such licenses, and also imposes a penalty for misgrading cotton, a variation of 25 points to be evidence of wilful intent.

The States of Texas and Louisiana have State warehouse systems, and I have just received a telegram from Atlanta, Ga., requesting me to go there tomorrow to confer with members of the General Assembly of Georgia and Alabama, with the idea of securing uniform State warehouse laws. This movement in the South has hardly begun, but I am sure that it is going to revolutionize our system of handling and marketing the cotton crop.

The matter of marketing cotton is largely a question of finance and proper banking methods. The prosperity of the cotton States depends upon an intelligent use of the credits arising from cotton. All that I have attempted to do is to implant the idea in these States of transforming cotton into a basis of credit.

I believe that the State warehouse system is a scientific solution of the cotton problem. It is in its infancy, but can be developed to handle the cotton in each of the Southern States by the creation of an interstate board, which will enable us to regulate not only the marketing but the acreage and production of cotton.

All legitimate interests in cotton desire to stabilize its value. Hedge selling by mills to protect purchase of cotton is now a necessity because of the wide fluctuations in the price of the raw material. This is an additional expense, largely borne by the planter, because it is the visible cotton that bears the burden of the paper cotton traded in on the exchanges. The farmers need organization and some means of securing unity of action among the several States. Those who are interested in buying cheap cotton act as a unit, while we farmers are a disorganized mass.

I have had a hard fight in South Carolina, but it only makes the way easier in Georgia and Alabama. Of course, it is natural that the middlemen who are profiting by existing conditions oppose strenuously any change of methods which would interfere with their profits. A fierce assault was made upon me personally and politically last winter in the Legislature, seeking the repeal of the act, but it was overwhelmingly defeated, and I doubt exceedingly if a man could be elected

to office in South Carolina at this time in opposition to the State warehouse system.

I have so far kept it out of politics, and will continue to do so, because I regard that as the chief danger. We can make some changes in the law which will render it absolutely non-political, and, in fact, the average politician could not manage the State warehouse system, because it requires a knowledge of business and finance which very few of them possess. I do not intend to use it as a political weapon, nor let anybody else do it if I can help it, and when I go to Georgia and Alabama I will try to impress this view upon the members of the Legislature there.

I am glad of this opportunity to call attention to the State warehouse system through the columns of the MANUFACTURERS RECORD, because I know that it reaches a class of thoughtful persons whose sympathies will be of great value whether they are cotton planters or not.

An Optimistic Note from a Wide-Awake Southern Farmer.

Spartanburg, S. C., July 12.

Editor Manufacturers Record:

I again welcome the opportunity to renew my subscription to the MANUFACTURERS RECORD and enjoy sending you my renewal.

Spartanburg has felt the depression of low-priced cotton, but our people have turned their efforts in many other directions to overcome the depression and have again resumed progressive activity, this being a large county at the foothills of the Blue Ridge Mountains, dotted over with villages, and it is a good agricultural region, with good, mild, all-the-year-around climate. Spartanburg is near the central part of the county, and is a great railroad center, steam and electric. It has fine auto roads, and is only 70 miles from Asheville, N. C., the great summer resort for health, mountain scenery and pleasure.

Spartanburg county is engaged in agricultural and manufacturing, there being 32 large cotton mills in successful operation, besides many other industries, large quarries (granite stone), large fertilizer works and many other industries.

This county is favored with many natural advantages, being the southern watershed of the Blue Ridge Mountains, and is watered by many creeks and rivers. It has springs of purest soft water, and many mineral springs of rare purity and medicinal value. Some of these springs are highly improved and capitalized, one at \$350,000.

Two large electric power lines pass through this county, and could supply electric power for many more industries than are now in operation.

I am engaged in farming and fruit growing. I find that grass of all kinds and cereals of all kinds grow well here. Our people are now planting less cotton, and some are making a success with alfalfa on red lands and Sudan grass on gray lands. The hog and cattle-raising industry is improving greatly. We are using more improved machinery in farming. Our people are yet so set in their ways, growing cotton. We need more farmers to grow grain and livestock. We have home markets here at high prices—corn \$1 a bushel, hay \$20 a ton, and all other farm products in proportion.

J. G. MANSFIELD.

Increasing Capacity of Extract Plant.

About \$100,000 has been expended to increase the capacity of the Southern Extract Co.'s plant at Lonsdale, near Knoxville, Tenn., approximately \$80,000 being the amount invested for new machinery. A three-story 113x46-foot leach-house is included in the four additional buildings erected. These improvements increase the company's capacity 80 per cent., so that now it is shipping more than 25 carloads of wood bark every day.

Dr. Joseph A. Holmes, Our Greatest Public Servant—An Appreciation

"He Gave All He Had—and Himself—to the Public."

By DAVID T. DAY, Ph.D.

With his great aim accomplished—the establishment of a national bureau for the mining people—Dr. Joseph Austin Holmes gave up his life in Denver last Tuesday, as the result of overwork in Alaska two years ago, where he gave service beyond his power of endurance for the improvement of Alaskan mining conditions. In spite of pleurisy and bronchitis there developed, he continued in underground work with his rescue corps until it was too late to escape the white plague.

When one thinks of the great public service of men like Powell, Goethals, Gorgas, Senator Allison, Brooks, Parker, or women like Clara Barton, it is a great deal to say that Holmes distinctly outranked them all as a public servant. But the justice of this estimation of him may be apparent not only when we trace back to his inspiration all the present work which centers in the phrase "safety first," but when one measures what part of his energy various men have kept for themselves and families and what part went to the public, Holmes simply gave all to the uplift of mining.

Born of the South, he nationalized himself at Cornell University, and when serving North Carolina as its State geologist he early sought co-operation with many branches of the National Government, especially with the United States Geological Survey. As one of the co-operating geologists I came in contact with him.

Now, no one will try to write of Holmes without the standpoint of personal association, for the reason that impersonal description of his achievements would not reveal the man, and also because no friend could write any other way. I came close to him when, in the effort to rouse the South to an adequate expression of the mineral wealth of the Appalachian region at the Atlanta Exposition I went to the highest man to take up an exposition of North Carolina. I went to Dr. Holmes, but did not expect to get his assistance. The first lasting picture I have of him sees him down on his hands and knees arranging a section of a monazite deposit in that exposition. Those who have only thought of him as willing to lead should know how he followed the scheme laid out for the co-ordination of all those exhibits and how he went among the representatives of other States urging them to change special displays into such displays as would fit the general arrangement.

Naturally, his support in advancing the use of the South's minerals made me count upon his help at the Paris, Buffalo and Charleston expositions. When I was

appointed director of mining at the St. Louis World's Fair I soon recognized that no one could succeed there and continue in the Government service. I offered the position first to Prof. William Bullock Clark of Johns Hopkins. He could not accept. Then I offered it to Dr. Holmes. He accepted it not only because of what it offered in public service, but because he saw beyond it a national bureau of mines. He achieved that great purpose at the cost of his life, taken away at the flood, at 55 years of age.

Another vivid picture goes back to midnight before the opening day at the St. Louis exposition, where he went from one exhibit to another, aiding where he could, but actually tearing out large exhibits which had sprung up in defiance of the established methods to educate rather than advertise.

When one uses the expression "untiring energy," let him take the example of Dr. Holmes in building that exposition. He slept when exhausted, and then after perhaps four hours was back at the work again. The St. Louis exposition brought Holmes not "before the public eye," but into the nation's life. Every mining activity found his sympathy and came to love his simple, direct ways as a man. He never asked anything for himself, but everything for the common good, and his forcefulness as a seer gave him everything.

No one can successfully analyze his personal magnetism—no one wants to—but rather to add to its peculiar force by testifying to his quiet, dignified manner. He was deferent in his councils with others, and if an interview was profitless to his purpose no one blamed him for making up a little of the sleep he always needed until his interviewer offered some new thoughts.

Dr. Holmes gathered at St. Louis the greatest mining exhibit ever made. But this was and was meant to be but a stepping-stone to greater service. His guiding motive was to so arrange the exhibits that methods of better and more efficient utilization would be obvious. This was especially true of the displays to show how waste could be reduced in the use of fuels. So well was this done that it would have been folly to allow these exhibits to be dispersed after the exposition without using them for a great system of research in fuel conservation. By his own efforts he secured to the Geological Survey a special appropriation for organizing this great study, and what was more difficult, secured the loyal backing of the fuel exhibitors in maintaining

the exhibits and adding to them all manner of testing devices. The fuel testing plant was partly brought to the Jamestown Exposition.

Then the next step was to organize a technologic branch for continuing the work in the Geological Survey. Lack of room was an obstacle solved by securing the old arsenal grounds in Pittsburgh. With work in Washington, Pittsburgh, St. Louis, consultations in all fuel mining centers and efforts to secure further aid from Congress, Holmes never rested long in any one place, but spent his entire energy in travel from place to place. He was the inspiration for the men above and below him.

Meanwhile he saw his life's achievement growing rapidly. The only time I ever heard him put this into words was at the close of a rainy day after the St. Louis exposition, when, standing on a trestle overlooking the cement and coal-testing plants, he said: "David T., way beyond this present work lies my life's hope to develop systematic means for bettering human life in all our mines, and to stop all possible waste in using our precious stock of fuels and other minerals. I think it can take the form of a great bureau of mines. But it is not the form I care for, but the real betterment of miners."

Did he succeed? There is no question about that. A splendidly organized mining bureau is giving the very aid he hoped for in lessening mineral waste and has combined the golden rule and the helping hand into the slogan, "safety first!"

Such an organization as the bureau of mines requires a great executive as well as a planner, and the success in that regard has been due to the acting director, Mr. Van H. Manning. His skill as an executive, his resourcefulness and his phenomenal quickness and broadness of grasp of the possibilities of a new idea have justified the reliance placed in him by Dr. Holmes to develop the future of this institution; but greatest and most inspiring to his coworkers was Manning's loyalty to his chief during his long illness in the West. It is exemplified in this: Dr. Holmes' dearest hope was to effect saving of human life. While in his last illness Mr. Manning sent him the pen with which President Wilson signed the act creating mine rescue stations over the country and furnishing means for instructing miners generally in rescue work.

It was characteristic of Dr. Holmes that when he had made his fight for life at Fort Bayard and found several months ago that his malady was necessarily fatal, he left the hospital for his field of work, and with the effort to show his family all he could of the West went with them to the Imperial Valley and kept to his car while they visited the expositions and kept at his duties until a few weeks ago. He gave all he had and himself to the public.

COTTON BLOCKADES.

Historic Incidents Connected With the "Prince of Commerce" and the Confederacy.

[Liverpool Journal of Commerce.]

When slaves dropped out of the ledgers of Liverpool merchants cotton came in. Perhaps somewhat leisurely at first, for the town had petitioned Parliament that the abolition of the slave trade would "ruin" it, and there was naturally required a little time to recover from the shock of its own prediction not coming true!

However, cotton has remained a prince of commerce ever since, but today is rather puzzling the experts as to whether it is really contraband of war or not. Cotton has a good deal to answer for in a Liverpool which is just awakening to the fact that its great commodity is the principal ingredient of explosive shells! Yet our brokers keep smiling, and will find the Government all they want and more besides. Just now cotton enjoys the luxury of a German submarine blockade at home, but once upon a time it used to have that of the Federal gunboats abroad.

Liverpool is pretty well built of cotton, and cotton goes on extending it yet.

At the time of the American Civil War we were nearly all pro-Confederates and anti-Federals. We had let the Alabama slip out of the river, and, privately, were very proud of the fact. The Alabama always stuck loyally to Liverpool. We had built her here, and some of those who knocked rivets into her still remain. The

gentleman who made the leather buckets for the powder she carried only died a few months back, one of his treasured trophies being the original order, signed personally by Mr. Laird, and the old stevedore who helped to put munitions on board of her—at sea, near the northwest ship—yet survives. When the Kearsage sank her the crew were saved by the yacht Deerhound of the Royal Mersey Club, and her commander, Captain Semmes, retired to an avocation on shore at St. Helena, accompanied by the boat in which he was rowed away.

Her sailing master became a Liverpool cotton broker, retired with his gains while quite young, and died at Llandudno. But his partner is still alive—looking annually a little younger than the year before—and it is he who gave the writer a sketch of those days when cotton had its other blockade.

As before remarked, when the strife began we were optimistically Confederate. Magnates from the Southern States constantly arrived here, and, as some of them grew tobacco as well as cotton, spittoons were placed in the exchange newsroom for their convenience. Who remembers this fact? Tremendous operations—never equaled since—centered round the exchange. One day a broker coolly posted up a notice inside that he had settled £100,000 on his wife, having previously discharged all the debts he was aware of, but if anybody could prove that he owed them even a single copper he would settle up on the spot.

But they were not all as wise as he. Another, long since deceased, offered a large sum of money for an estate and mansion at Wavertree, then a charming country domain. His solicitor advised him to copy the ex-

ample already quoted, and settle so much on his wife. He was indignant. "Do you think I cannot take care of my own money? I intend to double it." But the crash came before the house was ready for occupation, which it never got. * * *

Cotton was responsible for the most successful charity bazaar ever held. It was for the relief of Confederate sufferers interned in Federal prisons. It began at St. George's Hall, Liverpool, on October 18, 1864, and was open for 2640 minutes, during which time the young ladies at the stalls squeezed over £4 per minute from those attending, while over £8 a minute was got from all sources combined. This is a world's record, as well as a Liverpool cotton one.

Florida Tobacco Exports Increasing.

Exportations of tobacco leaf from Florida amounted to 3,052,081 pounds in June, as against 479,498 pounds imported. Exports for the fiscal year ending June 30 amounted to 9,910,410 pounds. England takes the larger part of the exports.

For Attention of Sculptors.

Congress has appropriated \$75,000 to build the Francis Scott Key monument at Fort McHenry, Baltimore. Sculptors are invited to submit designs until December 15, and prizes will be offered for the three best designs. Lindley M. Garrison, Secretary of War, Washington, is in charge.

Increasing Prosperity in the "Land of Opportunity and of Heart's Desire"

[Special Correspondence Manufacturers Record.]

Boone, N. C., July 15.

It is a far cry from the North Carolina coast, from which the writer has been sending the MANUFACTURERS' RECORD special stories about the big undertakings in progress, to this wonderful mountain region, where there is in this little county town a courthouse higher above sea level than any east of Denver, and where the Blue Ridge, right at hand, seems to be like a wall of the world.

The writer, coming up by way of Raleigh, Greensboro, Winston-Salem, North Wilkesboro and the Watauga & Yadkin River Railway to Grandin, walked from the latter point across the Blue Ridge to Boone, a trifle over 20 miles, coming through Story's Gap, 3500 feet elevation, thence dropping down to Boone, the altitude of which is 3333 feet.

All along the route prosperity was evident—Raleigh pushing extensive street improvements and fine buildings, including the largest and handsomest county courthouse in North Carolina; Winston-Salem showing no sign of any depression, but holding its place as one of the greatest manufacturing points of its size in the country, with one company, operating with a capital of \$20,000,000 and employing over 10,000 hands, enlarging its plant.

But the prosperity of the country-side was after all the most impressive. Never has North Carolina had better crops than those which mark the present season, and small grain has been cultivated all the way to the sea; a return to the good old conditions before 1865, when North Carolina's world so largely changed and the State became a buyer instead of a seller of foods. Amazing is this year's increase in the food crops.

From North Wilkesboro to Grandin the writer traveled on the Watauga & Yadkin River Railroad 21 miles. This road was constructed by the Grandin Lumber Co. as a standard line, the State furnishing convicts to do both the grading and the tracklaying. Leaving the train at Railhead, 2½ miles from Darby, which is at the very foot of the southern face of the Blue Ridge, the

the sound of rushing water always in one's ears, and mile after mile of forest, enormous poplar, oak, hemlock and spruce trees, not to speak of other species; a virgin forest unsmitten by the axe, of which the Grandin Lumber Co. holds 180,000 acres, the largest single holding perhaps in North Carolina since Mrs. George Vanderbilt has sold the United States so many thousand acres of her vast possessions.

The railway will within 60 days be in operation to Darby, and from it the railway will go 16 miles to the crest of the Blue Ridge and then through Cook's Gap, a low one, to Boone, six miles farther. It will open this wonderful world of Watauga, which is as yet virgin in the matter of transportation except for the old-time wagon and team, the vehicle known as the hack, the horse and saddle and the itinerant automobile. On the way up the mountain the writer stopped at a farmhouse set on a little shelf on the mountain side, shaded by cherry trees two feet in diameter and black with fruit, big blackhearts which melted in the mouth, drank rich milk and ate honey and brown bread, nor could the people be induced to take a penny for any of these good things, and the only thing to be done was to induce the little children to take some money to put into the Sunday-school plate.

In this charming home grandfather and grandmother had lived for three-quarters of a century, and grandmother's desire was only to see an automobile, and haply a bicycle. Never had she seen either. Of course, a railway was beyond even her dreams, and yet, only a trifle over 13 miles away, a locomotive was throbbing and staring through its big headlight at the Blue Ridge ahead—so near and yet so far to her. There could not be a better example of the meaning of transportation facilities and the lack of them.

As the writer topped the crest of the Blue Ridge at Story's Gap a new world seemed to spring into being, as if created that instant by some magician. To the northward lay the rich valley of one branch of the New River, and beyond this, mountain after mountain, a

the other parts of the State. To the westward loomed Grandfather Mountain, almost 6000 feet high, with its vast length of outline, the westernmost peak, entirely of stone, presenting a perfect outline of a human face and a recumbent form, which give the name to the whole mountain, which is visible 40 miles—a mighty landmark.

Looking farther northward across the valley from the gap, there lay Virginia, separated by the most imaginary of lines. In the middle distance and as far as the eye or the field glass could reach were growing crops on the flats and almost like dots on the far slopes of the mountains; wheat, oats, rye, corn and the grasses, and at one's foot at an incline of 45 degrees was a field of rye, the heads of which looked over the tall fence, after the manner of rye, for no fence can overtop it. The owner of this field assured the writer that he had grown rye 11 feet high; so the belief of old farmers that it will always look over the fence is well founded, after all.

From Boone to Blowing Rock, 10 miles away, and on the crest of the Blue Ridge, 4400 feet above sea level, is a turnpike of only medium quality, while another from Blowing Rock leads down the south side of the mountain to Lenoir, 23 miles farther away. This is the artery and the only one which links Watauga with the rest of the State, slow and costly being the travel upon it.

To the eastward the adjoining county is Ashe, which has a brand-new railway from end to end, a spur of the Norfolk & Western, the south end of which is at a tiny hamlet named Todd, lying on the New River, one of the best fishing streams in the South for black bass. This railway leads away from North Carolina, however, and binds Ashe even more tightly to Virginia. Once the writer asked an Ashe man what was the capital of North Carolina, and got the prompt reply, "Richmond."

From Boone northwestward it is 23 miles to Elk Park, on the East Tennessee & Western North Carolina Railway, which was primarily built to carry the wonderfully rich and valuable iron ore from the Cranberry mines to the smelter at Johnson City, Tenn., no panics or other things checking for an instant this mine output and the steel making. This road extends southward into North Carolina to Pineola, a distance of about 25 miles from Cranberry. This Carolina & Northwestern Railway has pushed its line from Chester, S. C., through Lincolnton, N. C.; Hickory and Lenoir to Edgemont, on the southern slope of the Blue Ridge, Pineola being well away to the northward of the crest of the ridge, they being divided by a great gulf, as were Dives and Lazarus of old.

The East Tennessee & Western North Carolina Railway has just begun the survey for a line southeastward from Newland, a point south of Cranberry, to Shull's Mills, on the Watauga River in Watauga county, eight miles from Blowing Rock. It is evident that people are looking at rich Watauga, a virgin field for transportation companies and which has the honor of being one of the three sections of the United States best adapted to horse and cattle raising, apple growing and cheese making. The county is what a capitalist would call a "gilt-edged proposition," and Uncle Sam takes official notice of this fact, for the statement above made is his and not this writer's. Millions of bushels of apples have gone to waste here for lack of transportation, and prices of products generally are only a fourth of what they are south of the Blue Ridge. The folks know only by hearsay, and little even by that, of the condition which people have come to speak of as "the high cost of living." They grow practically all they need except coffee and "sweetnin'," and as for that a number still make maple sugar.

It is quite natural that as the writer stood, a little this side of the crest of the Blue Ridge, after having "won the heights," and looked over rich and beautiful Watauga's fair prospect, a line from Whittier instantly leaped into the mind:

"Fair as a garden of the Lord."

There has come to be a slogan, and a splendid one, too, "See the United States First," and certainly there is no more beautiful and attractive part of this country than Fair Watauga, a Land of Opportunity and of Heart's Desire.

FRED A. OLDS.



ALONG THE WATAUGA & YADKIN RIVER RAILWAY—CONSTRUCTION ENTIRELY BY STATE CONVICTS—STONE AND EARTH REMOVED BY BLASTING, NO STEAM SHOVELS BEING EMPLOYED.

delightful walk across mountains was begun, the distance from Darby to Aho, which is half a mile this side of the crest, being 11 miles, while from Aho to Boone is seven miles. The way was first along Elk Creek and then Dugger's Creek, with one waterfall after another,

world of vivid green, and in the middle distance tiny little Boone and the Appalachian Training School, one of the two schools North Carolina provides for her young men and young women in this mountain world, which is so shut off as yet as to be almost distinct from

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Oklahoma's Oil Field Dominates the World's Market

THE AMAZING DEVELOPMENT OF THE CUSHING-OILTON WONDER FIELD—
PRODIGIOUS INCREASE IN THE BUSINESS OF THE RAILROADS—
MILLIONS PAID FOR STEEL FOR THOUSANDS OF TANKS.

[Special Correspondence Manufacturers Record.]

Oilton, Okla., July 16.

For the outsider to understand the magnitude of the Cushing-Oilton oil field it is really necessary for him to visit the wonder field in person, securing a first-hand knowledge of the actual conditions. Unless he is conversant with the oil game in all its details, it is difficult for him to understand that this field, which at its greatest dimensions is not over 20 miles long by 4 wide, furnishes two-thirds of the crude oil of the State at the present time and 60 per cent. of the high-grade oil of the world. It is feeding refineries all the way from Oklahoma to the Atlantic seaboard and also all the way from Oklahoma to the Gulf.

Something of the magnitude may be gained from the facts that this field governs the world's crude-oil markets and prices at the present time. Oil men everywhere are asking, "How much longer can the field continue?" They declare that the price of crude cannot

world combined. In 1914 the consumption of Oklahoma crude amounted to 81,852,795 barrels.

The program of the big producing companies in this district has been for some time to get all the crude possible into storage and then hold it for a better price. This has been followed consistently, and the companies that were able to do this will at least double their money in the long run. One Oklahoma producer, President John Schell of the Minnetonka Company, predicts a price of \$2.50 a barrel for Oklahoma crude within the next two years, and he says this figure is what the companies that put oil in storage are now waiting for. According to Schell, the 40-cent oil now being stored will yield a profit of at least \$2 a barrel.

Within the State of Oklahoma at the present time there are 1285 steel storage tanks completed, with a capacity of 55,000 barrels each, and 107 building. The cost is \$13,500 each, or a total investment of approxi-



A DRILLING SCENE IN THE CUSHING-OILTON DEEP SAND DISTRICT.

get better to any great extent until the "head goes off the big field." Owners of oil properties in other fields are holding back development, watchfully waiting for the time when the deep sand (Bartlesville) of this field will refuse longer to yield the mammoth gushers that have been coming in for something over a year. The others are shallower fields, as a rule, with small producing wells, and these cannot be developed at a profit as long as the price of oil remains at anywhere from 30 cents to 50 cents a barrel, the present prices in the Mid-Continent field. Whenever the "head does go off" of the Cushing-Oilton field, thereby permitting the price of crude to go up, there will be hundreds and even thousands of the small producing wells brought in. Oil men say that to drill such wells at a profit the price of crude should be at least 75 cents a barrel (42 gallons). And when the price of oil does go up it must be remembered that the entire deep-sand district of the Cushing-Oilton field will be redrilled to the shallower sands, which have thus far been passed up by the operators in order to get the Bartlesville sand gushers.

The daily production of this field is still in the neighborhood of 300,000 barrels daily. One oil expert estimates that the deep-sand district alone will yield 130,000 barrels daily for a two-year period, and there are still approximately 600 locations yet to be drilled. He places the total production of this district at 400,000,000 barrels; for 1914 the production was 40,000,000 barrels. The market for Oklahoma crude oil now amounts to about 300,000 barrels daily, and within the field there are now 40,000,000 barrels in storage, or as much as this district produced last year. The amount of stored oil in the Mid-Continent field now totals over 50,000,000 barrels, or far more than all the rest of the

mately \$16,000,000 in this size tanks alone. Also there are 905 tanks of from 35,000 to 37,500 barrels capacity each; these cost \$7,602,000, or a total cost of all steel tanks in the State of over \$23,000,000. More than half of these tanks are within the Cushing-Oilton field, while oil from this field has also filled a majority of the outlying tanks.

From the Cushing-Oilton field there are now five important pipe lines to intrastate points, reaching eventually to the Gulf and Atlantic coasts. Lines completed this year have added a carrying capacity of 75,000 barrels daily. These lines penetrate or have connection with the other pools within the Mid-Continent field. The independent oil refineries in Oklahoma alone are now using 50,000 barrels daily, and those just inside the Kansas line, fed exclusively on Oklahoma crude, are using 20,000 barrels daily.

Shipment of crude oil by rail from this field is also a big feature, and long trains of tank cars are hauled daily across the State. Railroad officials say that there are now 25 miles of loading racks for this field alone. The oil is piped from the field to the loading racks and then shipped to points throughout the entire United States. This makes the outward freight movement from this field one of the most important features of railroad business in the world at the present time, while the inward movement is almost as great. The hauls of oil-field material and supplies, including the steel for tanks, have been exceedingly heavy. This is evidenced by the fact that one oil company had 30 trains of steel en route to Oilton at one time, while another had 300 cars of steel.

This heavy freight movement has increased the business of the railroads in the oil-field vicinity to almost

unbelievable proportions. One railroad company now has a quarter-million dollar monthly business at a station where there was not even an agent in 1914; at another station this company has increased from \$2500 a month in 1914 to over \$50,000 a month for 1915, while at a third station the business went from \$1500 a month to \$125,000. In the railroad yards at Oilton, a town that did not even exist prior to February 11 of this year, the freight receipts now amount to 1000 cars a month.

The population of the oil field and the outlying towns dependent upon it now totals 50,000 people. Of these 9000 are teamsters, who receive from \$2 to \$3 a day. There are at least 20,000 oil-field workmen, making an average of \$5 a day. It is estimated that in tank building alone there is an expenditure of \$75,000 a day. In service within the field are 20,000 horses, an investment of \$2,500,000.

During the first six months of 1915 there were 2034 wells completed in the Kansas and Oklahoma oil fields. Of these 334 were dry holes and 301 gas wells. The new production amounted to 715,239 barrels daily. During the first six months of 1914 there were 7035 completions. The big decrease results from the fact that the big deep-sand production of the Cushing-Oilton field has stopped development elsewhere. The new production for the first six months of this year, however, shows an increase of 285,470 barrels daily over 1914. This is also the result of the big gushers in this field. Within this field alone there were 549 completions during the first six months of 1915, with only seven dry holes and nine gas wells. The new production amounted to 661,930 barrels daily, leaving but 53,309 barrels of new production daily for all the other Oklahoma and Kansas fields.

C. M. SARCHET.

Virginia Polytechnic Institute Expands.

The steady increase and expansion of the Virginia Polytechnic Institute and Agricultural and Mechanical College, Blacksburg, Va., would seem to indicate a growing appreciation by Southern people of the value of giving their boys a technical education.

Recently the Institute enlarged its grounds by the purchase and lease of about 230 acres of land which adjoins its farm. This will be used for farming and experimental purposes in connection with the State agricultural demonstration and extension work which has been placed in charge of the Institute.

The new McBryde building of mechanic arts is nearly completed, and will be ready for occupancy for the next session. This is a beautiful building of native stone and reinforced concrete, covering one and a quarter acres of ground, and is as nearly fireproof as possible. The architectural design of the building is in accord with the style and plans that have been found most desirable in the construction of the very best commercial and educational shops in the country. Its equipment, which will be in accord with the building, has already been purchased and is ready to be installed.

The Institute has also installed good laboratories not only in the scientific and agricultural departments, but also in the various engineering departments.

The Virginia Polytechnic Institute is now on the 14 unit basis, and its work is accepted by all of the Northern and Eastern institutions. The larger proportion of the graduates, whether in engineering, agricultural or applied science, go immediately into commercial work.

The professors and instructors in the scientific and agricultural departments are very much in demand for institute and other field work, and are frequently called upon to go over the State to instruct farmers and to deliver lectures.

University Extension Courses for Workmen.

A plan for establishing university extension courses in a number of manufacturing plants is being worked out by the Tennessee Manufacturers' Association and the University of Tennessee at Knoxville. It is proposed that university faculty members shall deliver lectures to classes of men to be organized in the various plants.

Making Charleston a Great Coal Port

PROGRESS OF PLANS BY SOUTHERN AND CLINCHFIELD ROADS TO INSTALL IMMENSE TERMINAL FACILITIES.

[Special Correspondence Manufacturers Record.]

Charleston, S. C., July 16.

Though no definite date has been set for the formal opening, it is possible that within the present month the modern coal-handling pier constructed by the Southern Railway on the Cooper River, just outside the city limits of Charleston, will handle its first coal, thus inaugurating for the first time in the history of Charleston the handling of coal on a large scale and at the same

field & Ohio Railroad, after it has completed its plant here, will ship the coal from the Clinchfield mines in Virginia, and also bring coal from Kentucky, Tennessee and adjacent coal-producing territories down as far as Spartanburg over its own lines. This coal will then be taken by various other railroads and brought into Charleston, either to be exported or for the bunker business of ships through the local coal-handling pier.

sea. If coal is needed, the steamers have heretofore had to make a trip to Norfolk.

In a few days the date for the opening of the Southern Railway coal pier will be announced. This will be Charleston's first actual step toward becoming a coaling station, it only having handled during the whole year of 1913 enough coal to keep the new plant busy for one day.

The trestle leading to the pier has its origin on a strip of land filled in from the channel of Cooper River, so as to make the present mean low tide a depth of 30 feet in front of the pier. The trestle from the time it leaves the ground until it reaches the end of the pier is approximately 3800 feet. A part of this—2250 feet, to be exact—is double-tracked, which includes that part



NEAR VIEW OF COAL PIER, SHOWING CAR DUMPER, COAL HOPPER, PORTABLE TOWER AND TELESCOPIC CHUTE.

time placing it on a competitive basis with other coal-shipping ports of the South Atlantic seaboard.

The Carolina, Clinchfield & Ohio Railroad is proceeding with the ground work for a similar coal-handling pier, part of which will be within the city limits of Charleston and the other on Drum Island, which is located between Town Creek and Cooper River. Though the actual construction of the pier is temporarily held up on account of contemplated changes in general plans, the filling in of the ground on which the pier and necessary warehouses will be located is going steadily forward, and a contract with the city of Charleston and the railroad company stipulates that at least one unit of the proposed terminal coal plant shall be ready to place coal in the ship's hold by July, 1916.

With such facilities as these, Charleston will handle a very large export coal business. The Southern Railway and its subsidiaries will bring coal down from the Appalachians, in addition to handling coal for the other railroads and shipping companies. The Carolina, Clinch-

field & Ohio Railroad, after it has completed its plant here, will ship the coal from the Clinchfield mines in Virginia, and also bring coal from Kentucky, Tennessee and adjacent coal-producing territories down as far as Spartanburg over its own lines. This coal will then be taken by various other railroads and brought into Charleston, either to be exported or for the bunker business of ships through the local coal-handling pier.

Great predictions are made by local authorities as to the future of Charleston as a coal port. They cite the North Atlantic ocean chart, which shows that the route taken by the European-bound steamers coming through the Panama Canal and from the Gulf ports, as a rule, hugs the South Atlantic coast and follows the Gulf stream to a point just east of Charleston. Then the route turns directly eastward for the journey across the

of the gravity track running alongside the main upgrade track. On one track the coal cars are pushed upwards to the coal-handling machinery. After they are empty they are shoved a few feet beyond toward the water end of the pier to the "kick-back" switch, which diverts them to gravity track and without steam power they are returned to the freight yards 3800 feet away. Up to the coal pier, which is 375 feet long and has a concrete foundation, with steel superstructure, the trestle is constructed on creosoted wood pilings.

On the 375-foot pier, which is supported by gigantic steel and concrete underpinnings, the coal-handling machinery is located. This consists of a car dumper, which is about the height of an average three-story building; the coal hopper, into which the cars, after being lifted bodily by the dumper, pour their contents and which has a capacity for receiving the loads from one car every two minutes or a total of 1500 tons per hour; the portable tower, which supports the boom and the telescopic chute; the boom, which is fitted out with an endless belt con-

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veyor, which, in turn, takes the coal from the hopper to the chute, and last, the telescopic chute, which will stick its head clear down into the hold of the ship and spit out coal in even layers. As both the coal dumper and the boom and chute towers are portable and can be moved back and forth along the 375 feet of trestle provided for them, the ship while loading will not have to be moved so that the different hatches can be filled. The new machinery has the further advantage over others of its kind, in that there is practically no decided drop for the coal, thus preventing the breakage, which has caused many foreign shipowners to object to the use of American coal.

It is estimated that the total cost of the Charleston coal pier will approximate \$600,000, the land having cost \$100,000; the trestle and pier, \$200,000; the machinery, which was manufactured by Wellman-Seaver-Morgan Company of Cleveland, O., \$200,000; freight yards with a capacity for 400 cars and a \$25,000 concrete and brick constructed substation, which is located to the right of the pier, as one approaches the water end, and which will furnish power for running the coal-handling equipment. The power will come from the local plant of the Charleston Consolidated Railway & Light Co.

The Southern Railway is for the present making ready for immediate use one unit of the six that can be provided in the local plant. The present capacity, as has been stated, is 1500 tons per hour. The work started some 10 months ago. A locomotive piledriver manufactured by the Industrial Works of Bay City, Mich., was used in the construction of the trestle.

On 555 acres of island and mainland acquired by the Carolina, Clinchfield & Ohio Railroad on the Cooper River, two and a half miles above the junction of the Ashley and Cooper rivers and nine and a half miles from the Atlantic Ocean, this concern will erect, when their plans have been fully carried out, a coal terminus, with modern coal-handling machinery, having a capacity of 4000 tons per hour or 30 cars per hour for the first unit.

The plans, which were prepared by the J. W. Frazier Company of Cleveland, O., will probably be changed, but will not affect the project as a whole. At present, however, they call for the construction of a concrete pier that will parallel the shore and channel. The pier will be built in units, but when completed will be 2000 feet long and 250 feet wide. It will be available on all sides for vessels. It will be equipped with coal-storage bins, with 1500 tons capacity, which will be loaded and unloaded by belt conveyors and dock loaders. A 33-foot pier will connect the larger pier with the mainland. A 500-foot basin composes the slip between the pier and mainland. The low-tide depth will be 28 feet at all points around the plant.

Bordering the water on the mainland, at an elevation of 12 feet, warehouses will be erected. This will make it possible for the coaling ship to discharge or take on other cargoes while it is stocking fuel. In the rear of the warehouses the land coal storage will be located. It will have room to accommodate 600,000 tons at a time. To the north of this, where the pier joins the land, the steam power-house will be located. In the rear of the property 90 acres will be given over to freight car storage and tracks.

The Atlantic Gulf & Pacific Company of New York has the contract for dredging. It is now engaged in filling 500,000 cubic yards of marsh mud, which will constitute the first of the three lifts or layers. The contract for construction of the pier and warehouses and installing the conveying machinery was let to McArthur Bros. Company of New York, but pending the slight changes in the plans this work has not been started. J. E. Shephardson, the terminal engineer, is in charge of the work for the Holston Corporation, which is a part of the Clinchfield interests. Roy G. Booker.

Birmingham District Coal Contract.

In addition to its recently-mentioned contract for 600,000 tons of coal delivered at New Orleans during the next three years, the United Fruit Co. of New Orleans has ordered about 40,000 tons of coal from the De Bardeleben Coal Co. of Birmingham. This coal is for delivery at Mobile on United ships reaching that port during the next 12 months. The coal company is reported as planning to build a tramway from its Sipsey mines to slack water, a distance of six miles, to enable it to barge coal down the river to Mobile.

Record-Breaking Petroleum Production

The production of petroleum in the United States in 1914 aggregated 260,312,535 barrels. Of this quantity, 265,762,535 barrels were either marketed or were utilized directly in field development, and 24,550,000 barrels were placed in producers' field storage to meet future requirements.

The average price per barrel was \$0.806 in 1914 as compared with \$0.954 in 1913, and the total value of the marketed oil was \$214,125,215, showing a loss of \$23,006,173 in value compared with the previous year.

No important changes were made in the rank of the oil-producing States in 1914, though the enormous output of the prolific Cushing pool in Oklahoma made that State a strong contender for first place, which was, however, retained by California by the fair margin of about 10,000,000 barrels. The greatest relative decline took place in West Virginia, which recorded a decrease of 16 per cent. below the output of 1913.

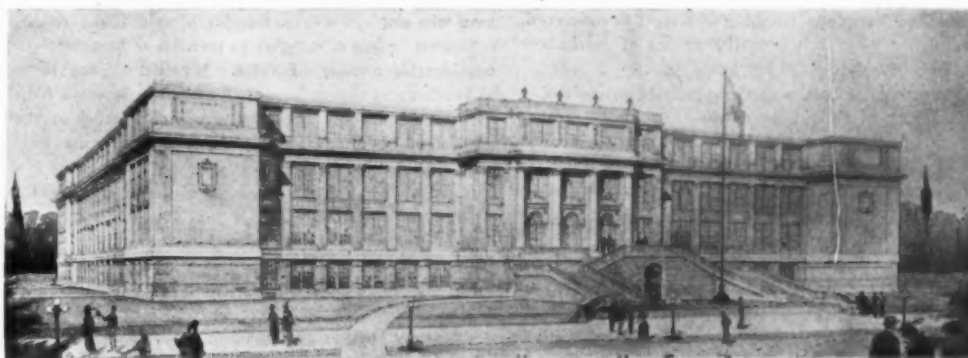
A comparative statement of the marketed production and value of petroleum in the United States, by States, in 1913 and 1914, as furnished by the United States Geological Survey, is as follows:

State or region.	1913.		1914.	
	Quantity (barrels).	Value.	Quantity (barrels).	Value.
Alaska.....	(a)	(a)	(a)	(a)
California.....	97,788,525	\$45,709,400	99,775,327	\$48,066,096
Colorado.....	188,799	174,779	222,773	200,894
Illinois.....	23,893,899	30,971,910	21,919,749	25,426,179
Indiana.....	956,085	1,279,236	1,339,456	1,546,042
Kansas.....	2,375,029	2,248,283	3,103,585	2,433,974
Kentucky.....	524,568	675,748	502,441	496,556
Louisiana.....	12,498,828	12,355,931	14,309,435	12,886,897
Michigan.....	(a)	(a)	(a)	(a)
Missouri.....	(a)	(a)	(a)	(a)
New Mexico.....	(a)	(a)	(a)	(a)
New York.....	948,191	2,284,307	938,974	1,760,568
Ohio.....	8,781,468	17,538,452	8,536,352	13,372,729
Oklahoma.....	63,579,384	59,581,948	73,651,724	57,253,187
Pennsylvania.....	7,917,302	19,690,502	8,170,235	15,573,822
Texas.....	15,009,478	14,675,593	20,068,184	14,942,848
West Virginia.....	11,567,299	28,828,814	9,680,033	18,468,540
Wyoming.....	2,406,522	1,187,232	3,560,375	1,679,192
Other.....	610,843	619,263	c7,792	c14,291
Total.....	248,446,230	\$237,121,388	265,762,535	\$214,125,215

Summary.
Appalachian .. 25,921,785 \$63,708,981 24,101,048 \$45,239,201
Lima-Indiana .. 4,773,138 6,588,068 5,062,543 5,983,356
Illinois .. 23,893,899 30,971,910 21,919,749 25,426,179
Mid-continent .. 84,920,225 80,767,758 97,995,400 78,671,902
Gulf .. 8,542,494 7,993,997 13,117,528 8,844,104
California .. 97,788,525 45,709,400 99,775,327 48,066,096
Colorado and Wyoming .. 2,595,321 1,362,011 3,783,148 1,890,066
Other .. 610,843 619,263 c7,792 c14,291
Total..... 248,446,230 \$237,121,388 265,762,535 \$214,125,215

aIncluded in "other."
bIncludes Alaska, Michigan, Missouri and New Mexico.
cIncludes Alaska, Michigan and Missouri.

A \$300,000 SCHOOL BUILDING AT HUNTINGTON.



A \$300,000 SCHOOL BUILDING FOR HUNTINGTON, W. VA.

Construction of the high-school building at Huntington, W. Va., contract let several months ago, is progressing. The building is 251x150 feet, four stories, of classical design and fireproof construction; granite base; outside walls of rough texture gray brick and architectural terra-cotta; Indiana limestone for columns and balustrades; composition roof; Kompolite, cement and wood-top floors. Its finish is of marble, slate, Travertine, tile, Caen stone, plain and ornamental plastering. The ground floor will accommodate domestic science department, laundry, housekeeping suites, gymnasium, manual training-rooms, foundry shop, etc., while the first floor will be devoted to classrooms, study halls, auditorium, book store, sewing and millinery-rooms, mechanical drawing-room and girls' locker-rooms. On the second floor will be nine classrooms, study halls, library, hospital, bookkeeping and banking-room, stenography and typewriting-room and lockers. The third floor will accommodate five class-

Of the marketed production, the oil-producing States of the South showed 44.47 per cent. of the entire production of the United States. The South's production was 118,191,817 barrels, valued at \$104,050,028, which was 48.59 per cent. of the value of the total production of the country. In 1913, out of a total marketed production of 248,446,230 barrels, valued at \$237,121,388, the South produced 103,179,557 barrels, or 41.53 per cent., with a value of \$116,018,034, or 48.93 per cent. of the value of the whole production.

Packing Plant for Columbia.

It is proposed to form a \$150,000 company to build a packing plant at Columbia, S. C., and, referring to the prospects for such an enterprise. John W. Lillard, chairman of directors of the Chamber of Commerce, states:

"South Carolina spends annually about \$27,500,000 for packing-house products. Of this amount, Columbia spends \$3,200,000.

"Should a packing-house be established in Columbia it will mean that a large percentage of the \$3,200,000 will remain in Columbia's trade channels. It will make Columbia the cattle center of the State; it will bring to Columbia daily shipments of cattle from various sections of South Carolina; it will bring additional families to Columbia to operate the plant; it will increase Columbia's payroll and population; it will encourage the farmers to raise more cattle and it will place our farmers in a more independent position, as they will not have to depend upon the cotton crop. Small industries will follow the packing-house to use its by-products, such as tannery, soap factory, leather factory, etc. A cold-storage plant will take care of all eggs raised and no doubt increase the supply of poultry and will mean another industry.

"The plant we propose to erect would consume annually 15,000 cattle, or about 33 per cent. of the present supply, and 100,000 hogs, or about 14 per cent. of the present supply."

rooms, chemical laboratories, teachers' rooms, physics lecture-room, music-room, exhibit-room and other departments. Verus T. Ritter is the architect and Henry Persun is the general contractor at about \$240,000, both being of Huntington. Bockway Plumbing & Supply Co., Huntington, has contract for mechanical equipment, including plumbing to cost about \$20,000 and split steam system of heating to cost \$40,000. Other contractors include Gracie & Wood, Huntington, stone and granite; W. C. Handshy & Son, Zanesville, O., concrete and brick work; Riverside Bridge Co., Martins Ferry, O., 515 tons structural steel; General Kompolite Co., New York, Kompolite floors; Bristol Iron & Wire Works, Bristol, Va., ornamental iron; A. Holt, Huntington, plastering; Trussed Concrete Steel Co., Youngstown, O., metal windows; L. H. Nielson Company, Pittsburgh, electric work. Herewith is a view of the building as it will appear completed.

Woeful Lack of Marine Terminals This Country's Crying Need

By H. L. ALDRICH.

In the article which I wrote for the columns of the **MANUFACTURERS RECORD**, page 34, issue of June 24, I discussed the building up of the American merchant marine, and naturally devoted myself entirely to this part of a broad question.

We all appreciate that it is very desirable to have our shipyards as busy as possible building large tonnage of freight and passenger vessels to add to our merchant marine. Furthermore, the desirability of building up our merchant marine, especially in the foreign trade, needs no further discussion.

But, in building up this merchant marine, there is one part of the subject that very few people seem to devote the attention to that it deserves. I refer to the subject of handling freight at marine terminals.

The transportation companies of the United States are woefully backward in using machinery at freight terminals.

The report of the Interstate Commerce Commission, published in 1912, shows that 900,000,000 tons of miscellaneous freight were handled during the previous year at the terminals of the railroads of the United States.

Engineers who have studied thoroughly into the subject of handling freight economically make the statement without reservation that from 10 to 20 cents a ton can be saved by the use of efficient mechanical appliances.

Freight must of necessity be delivered at the terminal of receipt and hauled away from the terminal of final delivery, so that, as a matter of fact, these 900,000,000 tons of freight call for double handling.

Using only approximate figures, it will be seen that here is one direction in which there is a possible saving to the railroads of somewhere between \$160,000,000 and \$320,000,000 a year. This is only a theoretical saving, but anybody who has studied into the subject must admit that if the railroads will use the proper mechanical appliances at their terminals there ought to be a saving at the very least of \$100,000,000 a year.

This same report of the Interstate Commerce Commission estimates that about 300,000,000 tons of miscellaneous freight were handled at marine terminals the previous year. The conditions are practically the same at a marine terminal that they are at a railroad terminal, so far as the handling of freight is concerned, consequently there is a potential saving of somewhere from \$60,000,000 to \$120,000,000 a year.

I am going to limit myself exclusively to discussing the handling of freight at marine terminals, as that subject is naturally uppermost in my mind, but what I shall say regarding this subject applies equally as well to the handling of freight at railroad terminals. The differences are minor, so far as the application of efficient mechanical appliances is concerned.

In spite of these many millions of dollars that can possibly be saved by the steamship and steamboat companies, is it not a very remarkable thing that with approximately 5000 miles of seacoast in the United States there is not a single dock in all of the hundreds of ports that can be looked upon as a splendid example of a properly equipped terminal?

The more one looks into the subject the more appalling the situation is. Particularly when we bear in mind that this branch of engineering has been given very careful consideration by leading engineers and manufacturers in several European countries.

In Rouen, France, a considerable amount of machinery was installed, with the result that on the waterfront in this city the capacity of docks was increased from 483 tons per linear yard to 1121 tons, simply by introducing machinery. In the port of Marseilles the increase was from 665 tons per linear yard to 1634 tons.

The most typical port in all Europe that has been splendidly equipped with the latest of mechanical appliances for handling freight is that of Hamburg, Germany, which has something like 700 traveling quay cranes, 200 or more winches and cranes in and on warehouses, a dozen or more heavy stationary cranes and other machinery.

Per contra, a horrible and appalling example is our own Mississippi River.

This river has something like 4000 miles or so of navigable water, and yet, so far as I know, there is not a single landing on the Mississippi or its branches that can be looked upon as having at hand the best and most up-to-date machinery for handling freight.

Against this situation let us consider the River Rhine, with about 350 miles of navigable water, on which there are 65 or more harbors, with considerably over 400 warehouses equipped with splendid machinery for handling freight, together with 600 or more cranes and other devices.

From this brief statement of the situation it will readily be seen that the transportation companies of the United States, including the railroads and steamship and steamboat companies, are approximately wasting, as a possible maximum, somewhere in the neighborhood of \$250,000,000 to \$350,000,000. Of course, there are many conditions under which machinery cannot be used to the best advantage, so that it is hardly fair to heap too much abuse on the transportation companies. At the same time, it is perfectly safe to state that they are wasting over \$200,000,000 of their stockholders' money by not studying the subject of handling freight economically and making use of the very latest and most efficient type of machinery.

We Americans pride ourselves upon being up to date and progressive in many ways, especially when it comes to railroading. Our best minds and our best engineering talent have been devoted almost exclusively to railroading for years, so that the other branch of transportation, that of water, has not received the attention that it should have received.

Just why so little attention has been given to this subject by transportation companies is difficult to state, especially as wages are considerably higher at terminals in this country than they are in European nations.

One reason that has been given to me by a number of men well posted on the subject of handling freight at terminals is that, as a general thing, the men in charge of the work have grown up from the ranks. Their ideas are limited, and it seems impossible for them to look beyond what they have already seen. Furthermore, there is no doubt that in some instances a man who employs a large number of men at a terminal cuts more or less of a figure in politics, as he controls a considerable number of votes. Whether or not there is anything in this statement, it certainly does not indicate that boards of directors have been looking at the subject of handling freight with the broad grasp that they should have done.

Two years ago or so Mr. J. J. Hill warned the railroad companies of the country that it would require at least \$5,000,000,000 within the next decade to bring railroad terminals up to what the increase in the volume of traffic would necessitate. In spite of this warning, so far as I know, there have been no terminals of any consequence built or enlarged along the lines upon which they should have been built and enlarged.

This subject of handling freight is one that our transportation companies must wrestle with in the most broadminded manner. So far as the marine interests are concerned, we already have nearly 9,000,000 tons of vessels—practically half the tonnage of the merchant marine of Great Britain and twice that of the next largest merchant marine, that of Germany—so that the field is ample for steamship and steamboat companies to devote all the energy they can possibly master to saving the vast sums of money that can be saved.

Hardwood ashes from sawmills at Harriman, Tenn., and in the surrounding country will be utilized for fertilizer purposes for G. N. Shepardson. This enterprise is expected to be of material benefit to the millowners, as Mr. Shepardson is arranging to have the mill managers ship their hardwood ashes to Harriman, where the waste will be cleansed of foreign substances and the potash retained. The product at Harriman will be shipped to Florida to be converted into fertilizer.

Purchase of Commercial Fertilizers for 1915 in the South.

The extent of this year's reduction in the use of commercial fertilizer for cotton is reflected in the sales of fertilizer inspection tags to June 25, 1915, compared with sales last year to that date in the cotton States, in which the use of commercial fertilizer is important in connection with the growth of the staple.

According to the reports of the field agents of the United States Department of Agriculture, the tonnage of fertilizer sales so indicated and the percentage of reduction from last year are as follows:

State.	Tonnage to June 25,		Proportion this year to last.
	1914.	1915.	
North Carolina.....	872,000	658,000	75
South Carolina.....	1,107,000	608,000	55
Georgia.....	1,282,000	718,000	56
Florida.....	152,000	103,000	68
Alabama.....	730,000	360,000	49
Mississippi.....	122,000	90,000	74
Louisiana.....	90,000	73,000	81
Arkansas.....	86,000	26,000	30
Total, above States.....	4,431,000	2,636,000	59

*Record doubtful; 60 to 65 per cent. more nearly correct.

In Tennessee the reduction in the use of fertilizer in the cotton districts is estimated at 50 per cent. In Florida and Louisiana the usual quantities of fertilizer have been used for truck crops, while the percentage used for cotton is estimated at less than half of that used for this crop last year.

The reduction in the absolute quantity of commercial fertilizer used does not measure the full extent of the loss in the productive powers of the plant from the lack of this usual supply of nourishment and stimulation. The quality of the fertilizer sold is much inferior to last year's supply because of the lack of available supplies of potash. This is reflected in the lower price of the fertilizer this year, which is due in large part to its inferior composition. While the tonnage sold in South Carolina, for instance, has dropped to 55 per cent. of last year, the value is said to have fallen to less than 30 per cent.

On the other hand, Southern farmers appear this year to have exerted themselves to a hitherto unknown extent in the utilization of home-produced composts and natural manures.

The use of commercial fertilizers is practically unknown in the great Texas and Oklahoma cotton area and in the rich delta sections along the Mississippi River, and a reduction in sales of this commodity in those districts would have no appreciable influence on the cotton crop there.

Increased Cypress Production in Florida.

The Southern Cypress Association will hold its next convention in Jacksonville, Fla., some time in November. This association, which is composed of the leading cypress manufacturers of the South, has its main headquarters in New Orleans, La., with George E. Watson as secretary.

Not long ago a branch office was opened in Jacksonville, Fla., because of the rapid development of the cypress industry in that State.

In a recent interview on the Florida cypress industry, published in the Florida Times-Union, Mr. Watson said:

"Only a few years ago the United States forest service, working with the census bureau, issued a report on the lumber industry of the country, in which it was stated that the production of cypress lumber in Florida aggregated about 60,000,000 feet a year. The development, however, has been more rapid of late, and this year will show a production of Florida cypress of more than 200,000,000 feet. The total production of cypress lumber in the United States is about 1,000,000,000 feet per annum, and since 1908 there has been an increase in the production of about 47 per cent. These figures are for the entire country, whereas Florida shows a gain during the same period of more than 300 per cent. This indicates that the most rapid development in this industry has been in Florida.

"The possibilities for the future in the development of this business must be known to those who are familiar with the vast areas of swamp lands in Florida, which contain a virgin growth of this wonderful timber. The fact is the industry, so far as Florida is concerned, is only in its infancy."

Western Md. R. R.'s New 900,000 Bushel Grain Elevator

The new grain elevator of the Western Maryland Railway Co., now under course of construction at Port Covington, on lower Baltimore Harbor, will, when completed about October 1, considerably add to the grain-handling facilities of the port, and be an important factor in determining the port's standing as a grain-shipping point.

The elevator has a handling capacity of, receiving, 30,000 bushels, discharging, 45,000 bushels of grain per hour, with total capacity, including that of annex of tubular concrete storage bins, of 900,000 bushels.

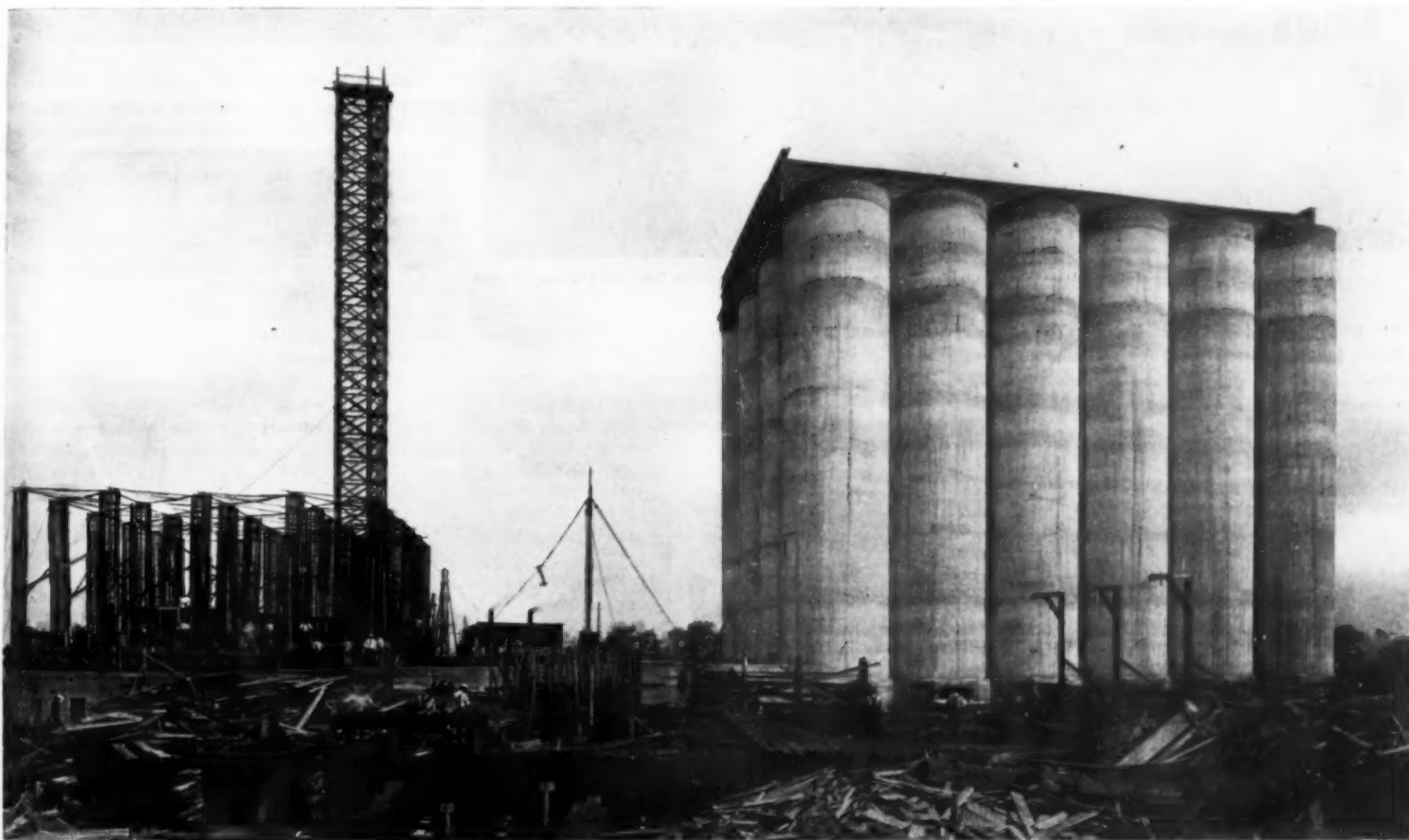
Plans were prepared by Max Tolz, president Tolz Engineering Co., St. Paul, Minn. Mr. Tolz advised the MANUFACTURERS RECORD that the two main portions of the building will have dimensions of 182x128 feet and 72x62 feet, respectively, both 190 feet high. Ships are to dock between and load from either or both buildings. The construction is reinforced concrete, with steel cupolas, and is absolutely fireproof throughout. The working house will contain between 60 and 70 bins, holding from 1 to 3 carloads each, and 8 shipping bins of something over 4000 bushels capacity each.

Contract for construction was awarded Jas. Stewart & Co. of Chicago at about \$500,000, exclusive of me-

chanical equipment, which adds approximately \$150,000 to the figure. The general contractor let subcontracts as follows: Sand and gravel, Arundel Sand & Gravel Co., Baltimore; Atlas cement, 18,000 barrels, Atlas Portland Cement Co., New York; Security cement, 3000 barrels, Security Cement & Lime Co., Hagerstown, Md.; Tidewater cement, 2000 barrels, Tidewater Portland Cement Co., Union Bridge, Md.; reinforcing steel, 570 tons, Lackawana Steel Co., Lackawana, N. Y.; spiral reinforcing steel for columns, American System of Reinforcing, Chicago; form lumber, Geo. T. Mickle, Chicago; sheet galvanized iron, A. Leclair, Chicago; rolling steel doors, Kinnear Manufacturing Co., Columbus, O.; fireproof doors and frames, Variety Manufacturing Co., Chicago; boat tanks, Novelty Steam Boiler Works, Baltimore; leg casings, spoutings and dock spouts, American Sheet Metal & Machinery Co., Chicago; steel rail for machine tracks, Illinois Steel Co., Chicago; steel sash, Wm. Bayley Company, Springfield, O.; elevating and conveying machinery, Webster Manufacturing Co., Tiffin, O.; hard-rubber belts, 6791 feet, Gutta Percha & Rubber Manufacturing Co., New York; electric motors, 37, 3-phase, 550-volt, 25-cycle, ranging from $\frac{3}{4}$ to 100 H. P., Allis Chalmers Manufacturing Co., Milwaukee; two No. 10

Invincible separators, Invincible Grain Cleaner Co., Silver Creek, N. Y.; dryers, one Morris, one Hess, Morris Grain Dryer Co., Milwaukee, and Hess Warming & Ventilating Co., Chicago; draw-off spouts, Dodge Manufacturing Co., Mishawaka, Ind.; dust-collecting system, Dixie Manufacturing Co., Baltimore; cleaning machine, A. Woolford, Baltimore; Morse silent chain drives, Morse Chain Co., Ithaca, N. Y.; Strong-Scott Manufacturing Co., agent, Minneapolis; freight elevator, Otis Elevator Co., New York; Humphrey elevator, Nutting Truck Co., Faribault, Minn.; Perfection Manufacturing Co., agent, Chicago; five 120,000-pound capacity scales, Fairbanks, Morse & Co., Chicago; testing of all cement and reinforcing steel, Robt. W. Hunt & Co., Chicago; pile driving and grading, Sanford & Brooks Company, Baltimore. The last-named concern received also contract from the railroad for dredging and filling for dock facilities and construction of concrete bulkhead and timber retaining walls.

Work of construction is going forward rapidly under the supervision of J. S. Johnson, the contractor's superintendent on the job. Hands are at work on the job 24 hours a day. Construction is being pushed as fast as is permitted on the fresh concrete.



WESTERN MARYLAND RAILROAD'S 900,000-BUSHEL GRAIN ELEVATOR AND STORAGE BINS, NOW UNDER CONSTRUCTION AT BALTIMORE.

For Large Central Power Plant.

[Special Correspondence Manufacturers Record.]

Hazard, Ky., July 20.

All plans have been consummated and actual work has been begun on one of the largest power propositions in this section of the country. This company will furnish power to coal companies and other industries in this section, and will be a very important factor in the immediate future development of this territory. It will mean, we understand, an expenditure in and around Hazard of more than \$250,000. The company is being financed by Col. Edward O'Toole and Howard N. Eavenson, well-known coal and power operators of Gary, W. Va., in connection with prominent Baltimore capitalists. The company has taken over the East Tennessee Coal Co.'s power plant, in which will be installed an addi-

tional unit. This installation will furnish power to the operators during the period of development and construction of the large central power station and transmission system. The large main central station will be of reinforced concrete and steel construction, with equipment consisting of turbo-generator unit, running condensing; automatic stokers, and ash-handling equipment, etc., and will represent the latest and most approved practice in electrical construction.

The company will build a transmission line from the plant of the East Tennessee Coal Co., running through Hazard to First Creek. Several routes for this line have already been located, survey of which was begun Monday. It is the intention to construct the main trunk line straight through the heart of the coal fields, with branch lines running to the various coal operations. This line will consist of 40-foot white chestnut poles, with galvanized-steel crossarms, and will be in every

way consistent with the modern construction of the power plant. The management is considering several locations for the central power plant, the exact location of which will be decided upon in the immediate future, and our Board of Trade and business men should see to it that the final location is in Hazard. R. L. Cornell is in charge, with headquarters in the Wootton & Morgan building.

\$250,000 for Roads.

Humphreys County Commissioners, Waverly, Tenn., have \$250,000 available for constructing their county's proposed highways, and contemplate from 200 to 250 miles of roads. James T. Anderson, chairman of Highway Commissioners, will receive bids until July 24, and G. B. Howard & Co., Nashville, are the engineers in charge.

Enlarging Phosphate Mining Operations

By C. D. CLOUGH, Lakeland, Fla.

The plant of the Lakeland Phosphate Co., near Lakeland, Fla., which was nearing completion just at the outbreak of the European war, has recently been put in operation in anticipation of a heavier demand for phosphate rock this fall.

This plant is one of the most modern and best equipped mining plants in the Florida land pebble phosphate district, and embodies a number of features for efficient operation and low cost of production.

As the amount of power necessary for operating a phosphate mining plant is large, special attention has

which is at present used to drive the pressure pumps can be fitted with an electric generator, increasing the generator capacity of the plant.

Two surface condensers from the C. H. Wheeler Manufacturing Co., Philadelphia, Pa., are installed in the basement, and are of ample capacity to take care of the three engine units.

A 1000-gallon underwriters' pump, supplied by the Canton-Hughes Pump Co., Wooster, O., is installed in a separate room for general service and fire protection.

The chimney for this plant is of reinforced concrete,

sign, and arranged for oil firing. The elevating and conveying machinery for the drying plant was supplied by the Jeffrey Manufacturing Co., Columbus, O.

All machinery in the washing and drying plant is driven by motors made by Allis-Chalmers Manufacturing Co., Milwaukee, Wis.

The dry storage bin is of timber construction, and has a capacity of 10,000 tons of dry rock.

A steel tower and tank of 20,000 gallons capacity, installed by the Lookout Boiler Co. of Chattanooga, provides water storage for general service and for fire protection.

In the mines 10-inch Morris dredging pumps, direct connected to 150 horse-power Allis-Chalmers motors, are used for handling the phosphate from the pits to the washer.

The plant of the Lakeland Phosphate Co. is located on a deposit of exceptionally high-grade phosphate, practically all of which will be sold in the export market.

The entire plant was designed by H. E. Memminger of Lakeland, Fla., who has been connected with the phosphate industry for the past 17 years, and it is operated under his supervision and management.

FARM DEVELOPMENT PLAN.

Bankers, Agricultural Commissioners and Others to Meet at Memphis.

A meeting is to be held at Memphis, Tenn., July 29 for the purpose of completing plans to aid farm development work in the territory surrounding that city and having business relations with it, and it is expected that representatives of banks within a radius of 200 miles will participate. An invitation has also been extended by H. M. Cottrell, agricultural commissioner of the Rock Island Lines, to the agricultural commissioners of all the other railroads which enter Memphis to attend the meeting.

The Memphis Rotary Club, which is interested in the movement, proposes the establishment of a farm development bureau and has begun a campaign for subscriptions to that end. Mr. Cottrell in addressing the club suggested that the banks endeavor to impress the farmers with the importance of diversification of crops in order to get them weaned from the one-crop idea. The influence of the banks, he thought, would be of great importance, although agricultural schools and farm newspapers would be expected to share in the efforts to influence a change.



GENERAL VIEW OF CENTRAL STATION AND PLANT.

been given to the power-plant equipment. The power station building is constructed of white sand lime brick, and is unusually symmetrical and attractive in appearance and of ample size for future extensions. The boiler equipment consists of three vertical water-tube boilers furnished by Erie City Iron Works, Erie Pa. These are steel encased and fitted with Foster superheaters made by the Power Specialty Co., New York city. The feed pumps are in duplicate, and also the Erie City enclosed feed-water heaters. The power plant piping was installed complete in every detail by the General Fire Extinguisher Co., Providence, R. I., and is especially designed to withstand a high degree of superheat. In the engine-room the unit for generating electric current for operating the motor-driven pumps in the mines consists of a 1200 horse-power cross-compound Erie City Lentz engine, direct connected to a 750-kilowatt General Electric 2300-volt 60-cycle 3-phase generator. The switchboard and controlling devices were installed by the General Electric Co., Schenectady, N. Y. A steam turbine exciter is provided for starting purposes, and a motor-driven set for excitation when main generator is in service.

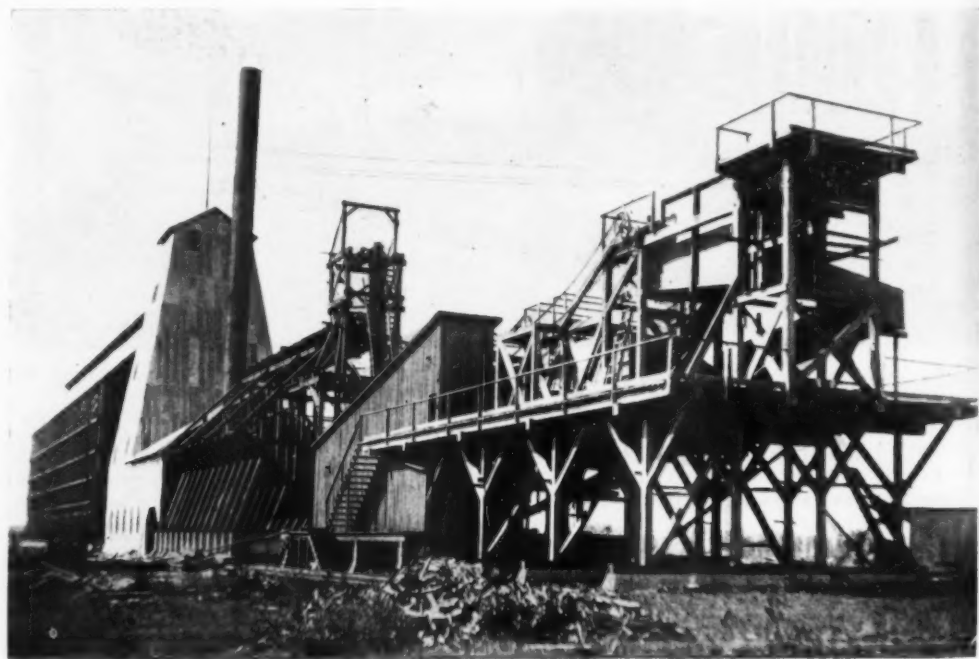
For raising water from the deep well by an air-lift system, an air compressor is installed consisting of an Ingersoll-Rand air cylinder made by the Ingersoll-Rand Company, New York city, and connected in tandem to a 275 horse-power Erie City Lentz engine.

A deviation from the usual practice is found in the pumping unit for supplying water under high pressure for hydraulic mining. Most of the plants in the Florida land pebble district are equipped either with pumping engines of various types or multi-stage pumps driven by electric motors. In this plant a 750 horse-power Erie City Lentz tandem compound engine is connected by means of a rope drive to two multi-stage pumps, each supplying 2000 gallons per minute at 175 pounds pressure. These pumps were designed and built by the Morris Machine Works of Baldwinville, N. Y., and are so arranged that by means of clutches either pump can be operated independently or both at the same time. By this arrangement in the future when mining operations are at a distance from the central plant the engine

175 feet in height, and was erected by the Weber Chimney Co., Chicago, Ill.

The washer plant for washing the phosphate embodies all the latest features, the log washers, rinsing screens, etc., being supplied by the Georgia Iron Works of Augusta, Ga.

The wet bins have a storage capacity of 1200 tons,



WASHER PLANT, FOR WASHING PHOSPHATE.

and are equipped with a Jeffrey drag conveyor for distribution of the rock at the top, and Jeffrey belt conveyors beneath for feeding the rock to the drying plant.

The drying plant is of sheet metal construction, and is equipped with two Schofield dryers of the latest de-

Manufacturers of Matches.

Bensusan, Sides & Co., Salonique, Greece:

"Get some manufacturers to communicate with us immediately and send prices, with samples, of matches. Can give them good orders."

WHERE TWENTY-SIX TONS OF DYNAMITE BLEW UP.



MOMENT OF BLAST AT QUARRY OF THE DIXIE PORTLAND CEMENT CO. OF CHATTANOOGA, TENN.



EIGHT MONTHS' MATERIAL FOR CRUSHERS AND KILNS FURNISHED BY THE ONE BLAST.

To Make High Carbon Steel Tubing.

High carbon steel tubing from old steel rails will be the product of the Tubular Products & Steel Works, which will incorporate with \$750,000 capital and build a plant at Cincinnati. The rails are heated to a white heat, split in the rolls, rolled again and then welded, the processes being continuous. The tubes are used in place of solid bars for agricultural machinery, also for iron beds and other articles. Later the company will build a plant for manufacturing tubes with electrically-welded seams. John Kennedy Ewing, Jr., of Pittsburgh is interested, and J. W. Bollinger, Cincinnati, will superintend and manage the plant. The plant will occupy a 300x100-foot site on a 35-acre tract, and include railway sidings, electric runways, cranes, etc.

Activity at Attalla.

W. R. Phillips of Attalla, Ala., writes to the MANUFACTURERS RECORD that the North Alabama Warehouse & Compress Co. is making good headway with its building, and will be ready in ample time for the opening of the new cotton season. The plant will be operated by electricity in compressing cotton in the Nesbit press, which is practically a new invention that will turn out almost a square bale. The use of electricity for compressing cotton is also a comparatively recent innovation.

The Attalla Compress & Storage Co., which has been in operation for the past three seasons, has done a big business this season. The Attalla Oil & Fertilizer Co., a new industry with its first season's business, this year has also made a good showing.

SIGNIFICANT INDUSTRIAL ACTIVITY.

Louisville Manufacturers Busy With Both War Orders and Normal Demands.

[Special Correspondence Manufacturers Record.]

Louisville, Ky., July 17.

Conditions have improved so much in so many lines of business that normal trade is almost here. A survey of the situation shows that commercial affairs are much more satisfactory than they have been during the past year and that pessimism is decidedly not in order.

War business is helping a good many concerns. Harbison & Gathrich, leading harness and saddlery manufacturers, have an order for about 5000 sets of artillery harness and trimmings, which is intended for delivery to the British Government. This is a subcontract let by the Perkins-Campbell Company of Cincinnati, and is the second order of the sort which the local factory has handled since the war began. The result is that the concern is doing a big business.

The C. Lee Cook Manufacturing Co., which is engaged primarily in the manufacture of metallic packing for steam engines, has recently started full-time operations on account of having received large orders for the manufacture of 24-inch engine lathes for foreign delivery. The orders were placed by the Hamilton Machine Tool Co. of Hamilton, O., and will keep the local plant busy for several months. The demand for packing in the marine field is also greatly stimulated.

The James Clark, Jr., Electric Co. has profited by the demand for equipment used in the manufacture of munitions of war to the extent that it has been making heavy shipments of its direct-connected motor-driven machine tools. The tools were sold principally to New York, and the assumption is that most of them were exported.

The largest boiler order placed in this section this year fell to the Henry Vogt Machine Co., which was recently given a contract by the Standard Oil Co. for the delivery of eight 500-horse-power water-tube boilers for delivery at Wood River, Ill., and twelve boilers of the same type and capacity for installation at Whiting, Ind. At the same time the Standard Oil Co. gave the local concern orders for two 200-ton refrigerating machines and nine oil-chilling machines for use at Whiting. The Henry Vogt Machine Co. reports heavy business in its foundry and drop-forging departments and a marked improvement in the situation during the past 60 days. The development of the coal business in Eastern Kentucky has resulted in a heavy demand for shaker screens and other cast-iron products which the Vogt plant is now turning out.

The Forman-Breen Manufacturing Co., which makes harness and saddlery, has found the demand for its products so good that it has been forced to secure larger quarters. It has purchased the main building of the Falls City Woolen Co., which contains over 50,000 square feet of floor space, most of which the company plans to utilize. It has purchased and installed a considerable amount of special equipment made by the International Harness Machine Co., while motor equipment was purchased from the James Clark, Jr., Electric Co.

The local plant of the American Oak Leather Co. is being electrified throughout, the equipment being installed by the Allis-Chalmers Company.

The Louisville Milling Co. is improving its plant, and has under way the construction of a new power-house. It has recently placed an order for a new 600-horse-power water-tube boiler with the Henry Vogt Machine Co.

The Louisville Provision Co. has made a lot of improvements, including re-enameling throughout, enlargement of capacity, the construction of a new engine-room, the installation of a five-ton Vogt ice machine, etc.

The J. V. Pilcher Manufacturing Co. of 800 East Gray street has found the Canadian demand sufficient to justify the establishment of a factory in the Dominion. This is now being installed in Windsor, Ont., under the supervision of T. P. Archer. The company manufactures metal "bachelor buttons."

Woodford Shannon, formerly in charge of the plant of the McElroy-Shannon Spring Bed Co. in Louisville, has recently established a small plant at 727 South 15th street for the manufacture of bed springs. Mr. Shannon is now organizing a new company, to be called the Shannon Spring Bed Co., which will go into

the business on a larger scale. The new company will be capitalized at \$30,000.

Another new industry is the Kentucky Carbonic Co., which is being organized by local bottlers to establish a plant to manufacture carbonic-acid gas. Samuel Leidigh of the Klee-Coleman Company, 617 South 2d street, is the head of the new company, which has \$50,000 capital stock. A large tank, steel drums, etc., will be needed, while the company will be a large consumer of coke.

The prospect of the establishment of another stove foundry in Louisville is good, as the Graf Stove & Range Co., which has been operating an assembling plant, is now considering going into the business on a larger scale. The new foundry is to be equipped for the manufacture of a large number of stoves and ranges, and will take the place of the small assembling plant at 214 East Ormsby avenue.

The rejuvenation of the walnut lumber business has resulted in a considerable expansion of trade by H. A. McCowen & Co., who recently moved their offices to Louisville from Salem, Ind. This concern reports that the furniture and interior finish trades have taken up the use of American walnut again, and as it has been demonstrated that there is an ample supply of this wood for all purposes, domestic manufacturers have again been using walnut in quantity. Mr. McCowen stated that at the July furniture shows, which are now in progress, more than 150 concerns are displaying walnut samples, indicating to his mind that the wood, which has been chiefly exported for a number of years, is again to be largely used in America. The McCowen Company has established yards and plants in Logansport, Ind.; Indianapolis, Salem, Louisville and Nashville, Tenn.

The W. P. Brown & Sons Lumber Co. of Louisville, which operates sawmills at a number of Southern points, has become interested in the operation of a new mill at Furth, Ark. This plant is to be run under the name of Brown Bros. & Carnahan. R. Carnahan of Louisville is in charge of the active work. Oak, cypress and gum will be manufactured principally at the new mill.

The Edward L. Davis Lumber Co., which recently closed its sawmill in Louisville, has installed motor-driven woodworking machinery for the manufacture of dimension lumber.

The demand for woolen goods has been so heavy that the Louisville Woolen Mills has been operating its plant full time, 56 hours a week. A night shift would probably have been arranged if it had been possible to get sufficient labor. Heavy duplicate orders have been received from clothing manufacturers.

Another textile plant which has been very busy is the Puritan Cordage Mills, which has been operating at night, while the Kentucky Cotton Yarn Co. has also found it necessary to use a night shift in its cardroom. It makes mop yarn and other coarse yarn products.

G. D. CRAIG, JR.

Erosion by the Rivers.

The Missouri is the muddiest river in the Mississippi Valley; it carries more silt than any other large river in the United States except possibly the Rio Grande and the Colorado. For every square mile of country drained it carries downstream 381 tons of dissolved and suspended matter each year. In other words, the river gathers annually from the country that it drains more than 123,000,000 tons of silt and soluble matter, some of which it distributes over the flood plains below to form productive agricultural lands, but most of which finds its way at last to the Gulf of Mexico.

It is by means of data of this kind that geologists compute the rate at which the lands are being eroded away. It has been shown that Missouri River is lowering the surface of the land drained by it at the rate of one foot in 6036 years. The surface of the United States as a whole is now being worn down at the rate of one foot in 9120 years. It has been estimated that if this erosive action of the streams of the United States could have been concentrated on the Isthmus of Panama it would have dug in 73 days the canal which has just been completed, after 10 years' work, with the most powerful appliances yet devised by man. (Overland Guidebook, Bulletin 612, United States Geological Survey.)

Vast Drainage Operations in Florida.

[Special Correspondence Manufacturers Record.]

Tampa, Fla., July 19.

Plans have been adopted and preliminary work begun on the largest single drainage project ever undertaken in the State outside the attempt to drain the Everglades. Three hundred and sixty thousand acres comprise what is known as the Withlacoochee River Drainage District, including practically all of Sumter county and large portions of Lake, Hernando and Pasco counties. The cost of the project is estimated in the neighborhood of \$2,000,000, and several years will be consumed in its completion. Besides this immense district, 90,000 acres are either being prepared for drainage or are shortly to be started on in Hillsborough county at a cost of about \$400,000. Besides these four projects, another drainage district of 300,000 acres is in the course of formation, with Webster, Sumter county, as the center.

In Pinellas county, adjoining Hillsborough, at Pinellas Park, the construction of a drainage canal approximately 12 miles in length, 35 feet wide and with five feet of water at low tide is under way, cutting through the Pinellas peninsula and joining Johns Pass, an arm of the Gulf of Mexico, with Old Tampa Bay. This canal is to drain approximately 30,000 acres of fertile land, as well as provide water transportation across the peninsula.

Including smaller districts, on which work is progressing, the total acreage under drainage operations in this section of Florida will approximate 1,000,000 acres. With other districts in the course of formation, including the great Peace River project, the total acreage will be considerably increased.

The drainage of these acres means to this section of Florida more than can be estimated. The land which is to be drained is mostly covered with saw grass swamps and cypress ponds. Under the water, which covers millions of acres in this section, is the richest sort of muck, which makes the best farming land, and plans are under way to colonize these lands as rapidly as they are drained, inaugurating a new method of starting farmers and truck growers into business. One company has arranged to finance those farmers who are not able to carry their own financial burdens, and to assist them as long as they show an aptitude for farming and an inclination to make the most of their opportunities.

The Withlacoochee River drainage project is said to be the largest single proposition of the kind ever undertaken by a private concern.

B. A. HEINT.

Reclamation Work at Marksville, La.

The dredge here shown, used in reclamation of land at Marksville, La., has a 56-foot span, 52-foot boom, 3-4-yard dipper, and is said to be one of the largest dry



land dredges ever built. This dredge was furnished by the Bay City Dredge Works, Bay City, Mich.

Sulphate of Alumina.

Gerherd & Hey, international freight contractors, 21 State street, New York:

"We are requested to give addresses of manufacturers in North America supplying sulphate of alumina (a raw material for paper manufacturers), and shall thank you if you can give us this information. The goods are intended for local consumption in Holland."

Art in Terra-Cotta.

The extent of the application of terra-cotta in modern architecture and the processes in the manufacture of the material are illustrated in the work of the Atlanta Terra-Cotta Co., which has its main office and works at East Point, Ga., six miles from Atlanta. When drawings from the architect of a building are received by the company they are turned over to the drawing room, where are made scale drawings and full size shop drawings to a shrinkage scale. From the latter are made plaster molds, into which the clay is pressed. After the material is taken from the mold and thoroughly dried it is sprayed with the required color and burned in a kiln for about two weeks. If there is any especial ornamental work it is done by artists in the modeling department of the plant, as shown in the accompanying



illustration. The entire operation from the time complete information is received from the architect requires about eight weeks for the average job. Terra-cotta is now made in all colors, and it is possible for the manufacturer to match approximately nearly all the various kinds of stone used in building. Among the buildings in the South in which have been used the products of the Atlanta Terra-Cotta Co., which is a branch of the Atlantic Terra-Cotta Co. of New York, are the Healey Building and the Fulton County Courthouse at Atlanta; the Courthouse at Tallahassee, Fla.; the Commercial Bank at Raleigh, N. C.; the Union National Bank and the Palmetto Bank at Columbia, S. C.; the Empire Building at Birmingham, Ala.; the Savannah Bank & Trust Co. of Savannah, Ga.; the Sanger Building of Dallas, Tex., and courthouses at New Orleans, La.; Raleigh, N. C., and Houston, Tex.

Water-borne Commerce at Freeport.

Freeport, Tex., reports that the Seaboard & Gulf freighter Honduras arrived with a large cargo of general merchandise consigned to merchants and jobbers of up State points and loaded out with a cargo of 91 cars of sulphur. The steamers Mae and Ogechee also arrived, and are taking out 110 and 100 carloads of sulphur, respectively. The tug Senator Bailey, towing the oceangoing barges Pettibone and Guyton I, made port delivering fuel oil for consumption by the sulphur plant here; also the steamer J. Oswald Boyd, which makes regular 10-day trips to the Brazos River from Tampico, Mexico, effecting fuel oil deliveries. The self-propelled power barge Pioneer received a cargo of merchandise from the steamer Honduras early in the week and sailed for Corpus Christi via the Intercoastal Canal. The steamer Kennebec of the S. & G. S. S. Co. is due in port next week with a cargo of merchandise from New York, and will carry out a full cargo of sulphur. The Houston & Brazos Valley Railway has been compelled to work day and night switching crews to keep the loading device at the docks supplied with sulphur while the steamers were in port.

To Build a Grain Elevator.

The citizens of Newport, Ark., expect to put up a grain elevator this summer to help to take care of the large corn crop that will be harvested this fall, and to be in position to handle next year's crop of wheat and oats. They will be glad to hear from parties having elevator machinery to sell and to get in touch with contractors who install grain elevators. Letters and price lists may be addressed to H. E. L. McCollum, secretary Newport Board of Trade.

LUMBER

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

A Broad Investigation of Lumber Questions.

The Federal Trade Commission has announced that it will co-operate with the Forest Service and the Bureau of Foreign and Domestic Commerce in their study of the lumber industry.

This announcement follows the action taken by the National Association of Lumber Manufacturers in its recent annual meeting at San Francisco in adopting a resolution that a committee of lumbermen should lay before the commission the conditions now existing in the industry. A special phase of the situation now before the commission, which has also direct bearing upon the inquiry in progress, is the request from many lumber manufacturers that a limited form of combination for engaging in export trade be permitted. The commission has arranged for a series of hearings during the summer on this and other subjects relating to the lumber industry.

A study was undertaken 10 months ago by the Forest Service, with the aid of other Federal bureaus, to find out how the timber supply of the country is being utilized and whether or not normal and healthy conditions exist in the forest-using industries. The former Bureau of Corporations was one of the original co-operators in the plan, and the action now taken by its successor, the Federal Trade Commission, insures the continuance of this co-operation.

As the situation is described by the Forest Service, although logging and forest fires are reducing the timber supply by eighty or more billion feet a year, much low-grade timber is not marketable. From a quarter to a third of the material grown in the forests is wasted in manufacture. From the lumberman's standpoint the country seems to be glutted with lumber; but while some manufacturers have reduced their output for the time being, there is no prospect of any permanent weakening in the attack of the 45,000 sawmills upon the remaining forests. The necessity for realizing on investments in timber, together with other causes, has led apparently to the construction of sawmills with an output greatly in excess of demand.

At the same time many people believe that lumber costs too much. Retail prices have gone up in the last two decades, due in part to the fact that the supplies of timber nearest to the thickly-populated States have been reduced. There has also been much speculation in standing timber, which has tended to enhance timber values and to increase the prices demanded by lumber mills. The development of associations of lumber manufacturers and distributors has occasioned more or less belief that prices were being raised artificially. To what extent the rise in lumber prices has resulted from causes such as longer freight hauls, more costly logging and increased cost of labor and supplies, and to what extent it has resulted from speculative advances in timber values, and price understandings among lumber manufacturers or dealers, has been in dispute.

The part played by the Forest Service in the inquiry begun last year deals with the ownership of standing timber, the waste in its utilization and the factors controlling the production and distribution of lumber. The Forest Service is endeavoring to determine the profits or losses of lumber manufacturers and dealers in manufacturing and distributing lumber from the standing tree to the consumer.

The Forest Service has been brought into close touch with conditions in the lumbering industry through its administration of the bulk of the public timber lands, its efforts to develop forestry throughout the United States, and its study of the utilization of forest products. It regards the present conditions, by and large, as making the development of forestry and the rational conservation of the forest resources of the country an impossibility. Hence a study of the situation in its bearing upon forest conservation has been brought home to the Forest Service as one of the most necessary things to be done.

The Bureau of Foreign and Domestic Commerce, with its large facilities for the study of trade opportuni-

ties, is conducting an investigation of foreign markets, particularly in South America and the Orient, with a view to expanding the export trade in American lumber.

In announcing its co-operation in this inquiry, the Federal Trade Commission has issued the following statement:

"The purpose of the three Federal agencies in conducting this study is to make it constructive and helpful. The Government's point of view in approaching the problems concerned is directed toward the welfare of the country at large, but it is hoped that the inquiry will be of benefit to all branches of the lumber industry as well as to the consumers. Lumbering is the third of the country's industries in the value of its annual product, and it is a matter of general public interest to consider carefully any conditions which in the long run may injure either producer or consumer.

"Conditions in the lumber trade have changed, due in part to the widespread use of other structural materials than wood. Lumbermen are confronted with many problems, often not fully understood by them and seldom appreciated by the public. Much can be accomplished by ascertaining the facts and putting them before the people with the authority of a fair and unbiased investigation. It is the purpose of the study to find practicable and constructive suggestions looking to the improvement of the present conditions."

Co-operation Instead of Competition Urged by Lumber Operators.

A dispatch from Chicago says:

Governmental regulation of competition as opposed to the Government's activity against trusts and monopolies is a necessity, according to representatives of the lumber industry, who presented formal statements describing conditions in their trade at a conference held here today between the Federal Trade Commission and a committee representing the National Lumber Manufacturers' Association.

Overproduction, uncontrolled price-cutting and other ruinous competitive practices were blamed by R. H. Downman of New Orleans, president of the association, for the present situation in the lumber industry. He described the situation as being one of demoralization for the last eight years, including at this time a condition of actual loss and a shameful waste of forest resources in the face of the necessity of providing employment for 625,000 men, upon whom are dependent 3,475,000 persons. These figures, he added, showed the lumber industry to be the third largest in the United States in the number of employed engaged.

Charles S. Keith of Kansas City, president of the Southern Pine Association, suggested that the only remedy for existing conditions was to stop the production of more lumber than the market can assimilate.

"Today," asserted Mr. Keith's statement, "the lumber manufacturing business is virtually ruinous, and has been ever since the beginning of 1914. This state of affairs was accentuated immediately after the declaration of war. On the outbreak of war a reduction of 58 per cent. came in the volume of sales in August as compared with July. In September there was a 39 per cent. reduction as compared with August. This decrease resulted in the price of yellow pine reaching \$11.83 a thousand feet at the mills in December.

"The cost of production of yellow pine lumber in 1914 was shown to be not less than \$13.75 a thousand feet, while the price of lumber fell from the high mark of \$18.42 in February, 1913, to \$11.83 in December, 1914.

"The only remedy we can suggest is to stop producing more lumber than the market can assimilate. It is our belief that this would not be in violation of the law, in that it would not be in restraint of trade or lessen competition."

George E. Watson, secretary of the Southern Cypress Manufacturers' Association, said that from 1908 to 1913 there had been an increase in production of cypress of about 47 per cent. Just before this period, he said, a decline in sales set in as factories had found cheaper lumber suitable for sashes, doors and blinds. The manufacturers of cypress lumber, therefore, began an advertising campaign to educate the consuming public to demand cypress with the result that business in this

wood probably had suffered a smaller decline than had any other.

C. H. Worcester, chairman of the Northern Hemlock and Hardwood Manufacturers' Association, said that overproduction had resulted in demoralization. "The remedy is easy," he said, "and it is spelled 'co-operation.'"

Finkbine Lumber Co.

Details have been determined for the extensive lumber manufacturing plant which the Finkbine Lumber Co. of Wiggins, Miss., will build at D'Lo. This company has timber lands extending about 50 miles east of D'Lo, and the property is estimated to contain 800,000,000 feet of long-leaf yellow pine. It has awarded contract to the Sawmill Construction Co. of Savannah for designing, building and equipping the plant, preliminary work having already begun. The principal features may be briefly summarized as follows: 250-foot sawmill building, of steel and concrete, varying from 66 to 119 feet wide; 4 saw units with 10-hour capacity of 200,000 feet of lumber; 14x120-foot planing mill of steel construction; 500-foot timber dock of wood, except section behind mill, which will be of steel; 600-foot green lumber assorter, built chiefly of steel; steel-covered platform for loading cars; 120x72-foot motor-driven machine shop, of steel construction, equipped to repair logging locomotives, cars, mill machinery, etc.; boiler, engine and fuel house; four 500 horse-power boilers; 200 horse-power open-feed water heater; open burner for fuel; 1000-kilowatt high-pressure condensing steam turbine and alternator; auxiliary set of 125-kilowatt engine-type generator directly connected to steam engine; concrete stack; pumping plant for pond water supply, etc. About \$350,000 is the estimated cost of the saw and planing mills. Most of the machinery has been contracted for.

Philippine Wood Finds American Market.

That wood products of the Philippine Islands find a ready sale in the United States is demonstrated very forcibly by the recent purchase, cash payment for and delivery of 520,000 feet of Philippine lauan lumber in one day at Los Angeles, Cal. This is described as a record sale of this kind of wood. Those engaged in marketing the lauans state that they are rapidly establishing a place with the manufacturers of this country, and that thoroughly satisfactory results are being obtained by the use of the red and white lauans instead of the true mahogany from Mexico and the West Indies. It is asserted that many of the largest and newest office buildings, department stores, churches and residences on the Pacific coast are furnished throughout with Philippine lumber. Pinholes in the lauan are no longer considered a defect, since the manufacturers have learned how to fill these pinholes and finish the lumber to the complete satisfaction of the trade.

The white lauan (*Pentacme contorta*) is referred to by Commercial Agent Franklin H. Smith in his monograph, *Philippine Market for American Lumber*, just issued as Special Agents Series No. 100, and in *Lumbering Industry of the Philippines*, prepared by John R. Arnold as No. 88 in the same series. It is the most abundant native wood and the one most commonly used as a substitute for Douglas fir. Both the red and white lauans are light, soft to moderately hard, coarse and straight-grained. They are classed as "not durable," and it is said that they should not be exposed to constant moisture or to constant alternations of moisture and dryness. They are adapted to uses where cheapness and easy working are more important than strength or durability.

Pine Burr Lumber Co.

Extensive timber developments will be undertaken in Calhoun county, Florida, by the Pine Burr Lumber Co. of Savannah, Ga., which has been organized with a capitalization of \$500,000. About 146,000 acres, estimated to cut 600,000,000 feet of lumber, will be cut in the pine belt in the St. Andrews Bay territory. Mills will be installed, and it is stated that an initial daily capacity of 150,000 feet of lumber will be provided for. Philip N. Coleman is president.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

New Cars for Southern Public Utilities Co.

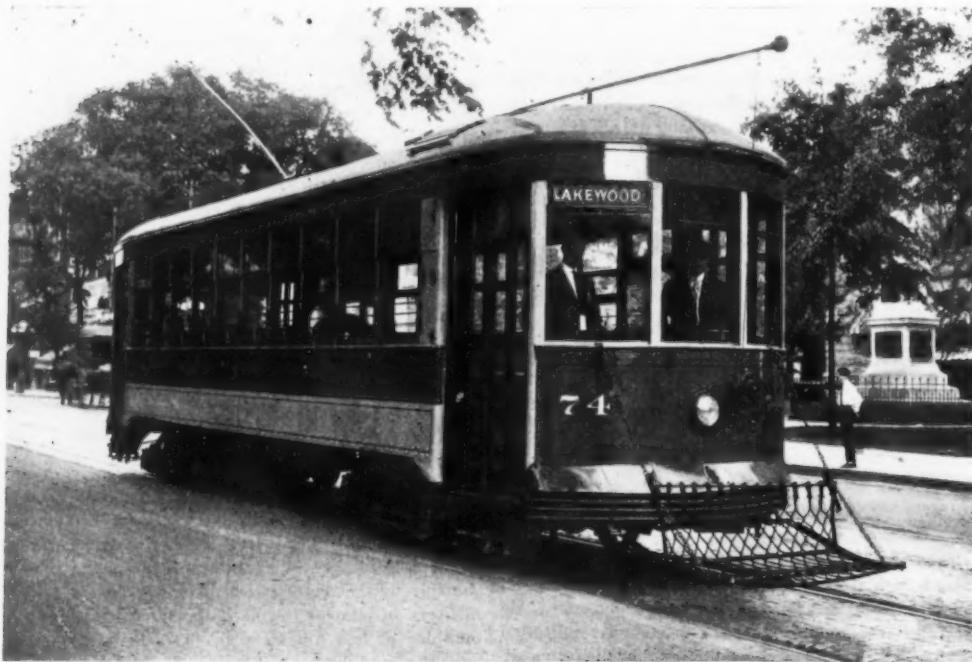
The Southern Public Utilities Co., Charlotte, N. C., has recently added to its equipment six double-track cars which are giving perfect satisfaction in both general and special service. It was necessary for some of them to operate over a line used by the Piedmont & Northern Railway with a voltage of 750, and also over the city system with a voltage of 550. The particular cars in this service encounter a change of voltage from 750 to 400.

It was found that the Westinghouse 532-B standard railway motors, 40 horse-power 500 volts, 50 horse-

double track nearing completion except nine miles of single track between Whittle and Dry Fork.

At intervals of approximately two miles, 109 signals of the upper quadrant three-position type will be erected. Power will be furnished from substations at Charlottesville, Shipman and Danville. These signals will be so controlled that they will indicate to the engineer the presence of a train ahead, a broken rail, open switch, or any other obstruction to traffic four miles in advance of his train, thus giving him all the information necessary to control the train safely and expeditiously. The signals will be operated by a three-phase alternating current of 4400 volts carried on special pole lines erected along the right of way. The current will also light stations and other buildings.

When these signals are completed the protective system which they afford will cover the entire line between Washington and Charlotte, N. C., with the exception of the 20-mile stretch between Arrowhead and Elma, Va., which has not yet been double-tracked. There will also



ONE OF THE NEW CARS AT CHARLOTTE, N. C.

power 600 volts, met the requirements of the service, and the cars were equipped with two motor sets. These motors have commutating poles of comparatively light weight for the power output, and give good commutation over a wide range of voltage. They have shown high efficiency in operation.

The cars are equipped with the maximum traction trucks of the J. G. Brill Company, with the wheels of rolled steel. The car frame is also of steel throughout. The car body is of the plain arch or turtle-back type, with four railway utility company honeycomb ventilators set in the roof. The vestibules are fitted with two-section folding doors, operated together with folding steps by hand levers. Iron railings control and guide the movements of passengers to facilitate the operation of the pay-as-you-enter system.

The exterior color design is a light yellow, with brown lines and trimmings. The inside finish is Philippine mahogany of plain sanitary design. All trimmings are bronze. The roof lining is of agosote painted apple green and decorated with gilt. There are 12 transverse seats of St. Louis Car Co. make, and four longitudinal seats. Above are Rico hand straps. The heating system includes the Consolidated Car Heating Co.'s coil heater, No. 392. The fare register is of the Ohmer pay-as-you-enter type.

The cars are 38 feet 2 inches long and 8 feet 7½ inches wide. They were built by the Southern Car Co., High Point, N. C.

Automatic Electric Signals.

The Southern Railway Co. has started work on electric automatic block signals covering 77.5 miles of the Washington-Atlanta line as follows: Orange to Arrowhead, Va., 36 miles; Elma to Amherst, Va., 18.5 miles; Whittle to Danville, Va., 23 miles. All of this is for

be a total of 415 miles so protected of the 649 miles between Atlanta and Washington.

\$3,500,000 FOR DOUBLE TRACK.

Southern Railway Sells Bonds to New York Bankers for Continuing Work.

The Southern Railway Co. has sold to J. P. Morgan & Co. and Brown Bros. & Co. of New York \$3,500,000 of the Atlanta & Charlotte Air Line 5 per cent. first mortgage bonds, Series B, and the proceeds thereof will be used for continuing the construction of second track on the main line. This is part of an authorized issue of \$20,000,000, of which \$5,500,000 were sold about a year ago, the rate of interest then being 4½ per cent. It is stated that the double-tracking to be done will be between Spartanburg and Central, S. C., 56 miles, and between New Holland and Cornelia, Ga., 21 miles.

Norfolk & Western's Record Coal Traffic.

The Norfolk & Western Railway, according to a report from Roanoke, Va., where its headquarters are situated, carried 25,688,983 tons of coal during the company's year ended June 30, 1915, this exceeding the amount hauled during the previous year by 242,373 tons and establishing a new record for coal shipments over the line. June showed the largest business of any month, with 2,680,465 tons, and February the smallest, with only 1,621,021 tons. It is said that everything indicates continued activity in the Virginia and West Virginia coal fields, and that the Norfolk & Western will receive its full share of the traffic.

Reported Deal for a Georgia Railroad.

George M. Brinson of Savannah, Ga., president of the Midland Railway, which is being built northwest out of that city, is reported to have bought the Savannah, Augusta & Northern Railroad, which was constructed several years ago by W. J. Oliver of Knoxville, Tenn., from Statesboro to Stevens Crossing, Ga., 39 miles, and which, until its lease expired recently, has been operated by the Savannah & Statesboro Railroad, of which it is practically an extension.

The Midland Railway, Mr. Brinson's latest enterprise, is designed to run from Savannah to Milledgeville, Ga., about 150 miles. The line which is reported bought lies nearly if not altogether along the route which the Midland proposes to traverse. He has not told much about his plans, and he has not yet confirmed or denied the report about the Savannah, Augusta & Northern Railroad.

GEORGIA ASKED TO BUY A ROAD.

Atlantic, Waycross & Northern Railway Might Be Made Into a Big Through Line.

A report from Atlanta, Ga., says that Henry C. Ferriot, representing the Atlantic, Waycross & Northern Railway Co., has made a proposition to the Legislature that the State purchase the line and extend the State's railroad, the Western & Atlantic, which runs from Atlanta to Chattanooga, from the former city to a connection with the Atlantic, Waycross & Northern, which would give a through line from Atlanta to the ocean at St. Mary's, Ga., about 300 miles. Estimated cost of construction approximately \$3,900,000. The subject was referred to a committee.

The Atlantic, Waycross & Northern Railway now has 11 miles of line in operation from St. Mary's, Ga., to Kingsland, Ga., and it is building an extension from Kingsland to Folkston, Ga., 22 miles, on which considerable grading has been done. The water at St. Mary's, which is on the St. Mary's River, which empties into Cumberland Sound not far from Fernandina, Fla., is said to be 27 feet deep, and provision is made for terminals there. Capt. L. Johnson of St. Mary's is president and general manager of the road.

West Point to Urbanna, Va.

A plan to build a railroad from West Point to Urbanna, Va., 17 miles, has assumed form in the organization of the York & Rappahannock River Railway Co., capital \$400,000, and application will be made for a charter. This proposed line would connect with the Southern Railway's line connecting West Point with Richmond, and thus make a route from Urbanna to Richmond of about 56 miles. Gasoline motor cars may be used.

The company is organized as follows: President, R. S. Bristow of Urbanna; vice-presidents, F. H. Sprague of West Point and J. R. Saunders of Saluda; treasurer, L. N. Weaver; secretary, W. H. Ryland, both of Urbanna. Other incorporators are B. Upton and C. E. Taylor of Urbanna, E. J. Smith and Claude Neale of Saluda, Crosby Thompson, H. E. Topping, H. I. Lewis and Edward Bland of West Point, and Thomas Gresham of Richmond. The board of directors, in addition to the foregoing, includes R. H. Bruce of Richmond and W. D. Evans of Saluda, Va.

For several years there have been plans to build a railroad which would connect Richmond with points on the Rappahannock River that now trade with Baltimore via steamboat. One of these projected lines was designed to run from Richmond direct to the south bank of the Rappahannock River, and, touching several points thereon, terminate at or near the Chesapeake Bay.

Safety on the Southern Railway.

The Southern Railway reports that it transported more than 16,500,000 passengers during the company's year, which ended June 30, and not one of them was killed in a train accident. Furthermore, there was only one fatal injury to a passenger on a train, and that one was standing on a car platform, against the rules.

A Proposed Mining Railroad.

A. V. Alexander, P. O. Box 102, Little Rock, Ark., says that his proposed railroad between the Rush Creek mining district in Arkansas and the White River division of the Iron Mountain Railroad is a narrow-gauge cheap line contemplating an investment of something like \$3000 per mile, including cost of material, equipment, etc. He has made a proposal to a few mine operators to build the road, which is not incorporated, but will be for private parties. The equipment, which is in hand, is a 20-ton Shay locomotive, 22 logging cars and some 35-pound relaying rails.

New Equipment, Etc.

Baltimore & Ohio Railroad has ordered 2000 steel hopper cars from the American Car & Foundry Co., East St. Louis, Ill.; the Pressed Steel Car Co. of Pittsburgh, and the Cambria Steel Co. of Johnstown, Pa., the contract being divided between the several companies. It has also ordered 35 passenger cars, 5 combination passenger and baggage cars, 2 baggage and mail cars, 4 baggage cars, a cafe parlor car and 2 cafe coaches from the Pullman Company, Chicago. Immediate delivery is stipulated for all this equipment. The hopper cars will be equipped with longitudinal doors and modern apparatus for complete and quick unloading.

Chicago, Burlington & Quincy Railroad has ordered 2000 box cars, the contract being equally divided between the American Car & Foundry Co., St. Louis, and the Bettendorf Company, Bettendorf, Iowa. The railroad has also ordered 500 tons of bridge steel from the American Bridge Co., Pittsburgh.

Southern Railway has ordered 300 tons of structural steel from the Virginia Bridge and Iron Works, Roanoke, Va., and 1200 tons from the American Bridge Co.

Seaboard Air Line is reported to have received and placed in service between Richmond, Va., and Columbia, S. C., 10 mountain type locomotives for hauling heavy express trains.

FOREIGN NEEDS

Machinery and equipment wanted abroad are mentioned in many letters received by the MANUFACTURERS RECORD, which is so widely read in foreign countries that we are in constant receipt of many letters from all parts of the world. For the benefit of our subscribers seeking foreign trade we publish the following extracts from recent letters:

An Opportunity for Roumanian Trade.

Sigmund Rosenthal, Roumania:

"I have just this day written to the house of Georges, Angus & Co., Ltd., Liverpool, telling them to send you the price of a subscription, \$6.50 cost to destination, and ask you to please let me know if you have received it. I want to thank you for the list of firms, to whom I shall write. I believe that as soon as the war terminates I shall be able to lay a strong foundation of commercial interest between our country and yours, and I believe that your people will lend me their aid to accomplish this object through their great connections, it being, of course, understood that the condition shall be so propitious that your products will be able to reach us and put themselves on a firm footing in our market, in view of the fact that the countries which now find themselves in a state of war will not after the peace be able even in a measure to cover the need of this country. Up to the present time foreign competition has been engaged in vain in battling to control our outlet for goods, though in future that might possibly be brought to a successful issue. However, your manufacturers, I believe, have every interest at stake to seize this favorable moment which is now before them in order to secure our trade."

Chemicals, Drugs, Sanitary Products, Etc.

Commissions y Representaciones, Jacinto Duarry Serra, 244 Mallorca, Barcelona, Spain:

"Put me in relation with manufacturers of: Chemical products and crude materials in general; farmers' pharmaceutical preparations; proprietary pharmaceu-

tical products (but only of houses that are willing to advertise and push their goods); perfumery and hygienic and sanitary goods, under similar conditions to above. Since 1900 I have been engaged in selling these not only to consumers, but to merchants, and have been receiving them from Germany and France."

Automobile Parts, Steel, Etc.

Tng. E. Macchi, 35 Via Mario Pagano, Milan, Italy:

"My business is supplying materials for motor cars and shop machinery. Before the war I used to purchase in Germany. The articles in which I am best interested are highest class of nickel and chromnickel steel; roller chains for automobiles and transmissions; silent chains for automobiles and modern transmissions; balls and ball bearing; chains, pedals and saddles for bicycles; carburetors for motor cycles."

Machinery, Tools, Metals, Etc.

Carlos Yensen, Grubbeget 1, Christiansa, Norway:

"I am interested in machinery and tools; metals and alloys; iron and steel in bars and profiled sections; forgings; tubes and fittings; wrought and malleable iron, black and galvanized sheets; plain and corrugated cast-iron pipes; flanged socket and spigot casted vertically and with rill in the socket for mains; water conduits and lighter for gas and liquids of lower pressures; valves, etc. Further, copper, tin, lead, aluminum in ingots, bars, tubes for every purpose, and sheets."

A Letter from Greece.

N. D. Jannoukakis, Praxitelus street, 93, Piraeus, Greece:

"Am an exporter of Greek products and of figs (string figs), St. John's bread (locust beans), olive oil (lapande) for soap, etc.; air or salt-dried kid skins, valoneas, etc. Put me in connection with importers of your side or give me their addresses, most in New York."

Cotton Cloth and Canvas Shoes.

Faillace Hermanos, Apartado No. 66, Barranquilla, Spain:

"We are interested to be in commercial relation with Palm Beach cloth manufacturers; also manufacturers of white canvas shoes for men."

Wants Paraffine Matches.

Office Colonial de Representation Commerciale, Pointe-a-Pitre le Guadeloupe:

"Put me in communication with manufacturers of paraffine matches. We used to get these goods from Belgium, but at present it is impossible to do so."

For Lighting Plants, Etc.

Chas. E. Selby, 76 Pitt street, Sydney, Australia:

"I would like to get in touch with a reliable concern that desires a live representative in Australia or New South Wales; also would like to hear from manufacturers of house and shop lighting plants."

Refrigerator and Ice Machine.

M. de Cardenas & Co., P. O. Box 893, Havana, Cuba:

"If you know of any manufacturer who makes refrigerators (for hotels and cafes), with ice-making machines attached, please put us in touch with these people."

Nail and Screw Hook Machinery.

Birnbaum & Co., 121 Newington Causeway, London, S. E., England:

"We require some automatic machines for making nails and for making screw hooks. Shall therefore be obliged if you will kindly connect us with some competent firm of manufacturers in position to supply various kinds of machinery at reasonable terms."

TEXTILES

Hillside Cotton Mills.

[Special Correspondence Manufacturers Record.]

Lagrange, Ga., July 19.

About 60 per cent. of the building work on the Hillside Cotton Mills has been completed, and will be finished about November 1. The main mill will be 315x132 feet, three stories, and is being built by T. C. Thompson & Bros. of Charlotte and Birmingham. Mill will contain about 21,000 spindles, 176 cards, etc.; capacity of equipment will be 120,000 pounds a week. Capital stock is \$500,000.

Names of the machinery contractors are as follows: Saco-Lowell Shops, Biddeford, Maine, Lowell, Mass., and Newton Upper Falls, Mass., pickers, flyframes, spinning-frames, cards and twistors; Dean Bros. Steam Pump Works, Indianapolis, pumps; American Moistening Co. (John Hill, Atlanta, Southern agent), humidifiers; General Fire Extinguisher Co., Atlanta, sprinkler and piping; R. D. Cole Manufacturing Co., Newnan, Ga., tanks; Lombard Iron Works & Supply Co., Augusta, Ga., boilers; Buffalo (N. Y.) Steam Pump Co., pumps; Goldens' Foundry & Machine Co., Columbus, Ga., shafting and hangers; McIntosh & Seymour Corp., Auburn, N. Y., engine; Otis Elevator Co., Atlanta, elevators; J. M. Clayton, Atlanta, wiring mill buildings; Lozier-Gandy Company, Lagrange, Ga., wiring cottages.

There will be 140 modern bungalows for taking care of the mill labor. This contract is also being handled by T. C. Thompson & Bros.

Crown Cotton Mills' Addition.

Contract for erection of the buildings for the Crown Cotton Mills' proposed additions at Dalton, Ga., recently announced, has been awarded to the Gallivan Building Co. of Greenville, S. C. These additions will include a 160x125-foot extension to spinning mill, a 250x100-foot weave shed, warehouses, cottages, etc. They will enable the company to add 15,000 spindles, with accompanying looms, etc., and this machinery will be ordered for installation.

Holland Manufacturing Co.

The Holland Manufacturing Co., Athens, Ga., lately mentioned as incorporated with \$100,000 capital stock, has organized and determined plans. It has leased buildings and will install 100 knitting machines, etc., costing \$20,000, for a daily capacity of 500 dozen pairs of hosiery. Forty electric and 20 steam horse-power will be used with belt drive, requiring from 100 to 125 operatives. W. C. Wilson, president; S. C. Candler, secretary-treasurer.

Southern Textile Exposition Extends Dates.

On account of the increase in the scope of the Southern Textile Exposition, to be held in Greenville, S. C., it has been decided to add two additional days to the regular dates. The dates will now be from November 2d to the 6th, inclusive. This exposition will be held under the auspices of the Southern Textile Association, the officials of which state that the prospects indicate this exposition will be the largest of its kind ever held in the South.

Textile Notes.

Atlanta (Ga.) Fiber Co. has been incorporated with \$24,000 capital for manufacturing absorbent cotton gauze, wadding, etc. H. C. Geiger, W. P. Jones and C. W. Johnson incorporated the company.

Smitherman Cotton Mills, Troy, N. C., will install 180 automatic looms to replace 180 plain looms, and contract for the new weaving machinery has been awarded to the Draper Company of Hopedale, Mass.

C. E. Neisler, Kings Mountain, N. C., will build 2000-spindle mill to spin yarns for his Pauline Mill, which weaves damask. He has awarded contract to the Kiser Lumber Co. for a two-story mill building.

Good Roads and Streets

SOUTHERN HIGHWAY ACTIVITIES.

Details of Week's Progress in Improvements in City and Country.

Further details of road and street undertakings and bond issues mentioned below are given under the headings Construction Department and New Securities, published elsewhere in this issue.

The MANUFACTURERS RECORD invites from its readers information about road and street work projected or under way, photographs of good roads and discussions of matters pertaining to the betterment of the highways of the South.

Bonds Voted.

Clarksville, Tex.—Red River county, White Rock, Annona, English and Clarksville districts, voted \$405,000 bonds to construct roads.

De Land, Fla.—Volusia county, De Land district, voted \$350,000 bonds to construct roads.

Leesburg, Ga.—Lee county voted \$27,000 bonds to improve roads, etc.

Lonoke, Ark.—Lonoke County Road District No. 8 issued \$25,000 bonds to construct roads.

Seguin, Tex.—Guadalupe county, Precinct No. 4, voted \$12,500 bonds to improve roads.

Bonds to Be Voted.

Clearwater, Fla.—Pinellas county votes August 17 on \$715,000 bonds to construct roads.

Dobson, N. C.—Surry county, Bryan township, votes August 24 on \$35,000 bonds to construct roads.

Dobson, N. C.—Surry county, Eldora township, votes August 10 on \$20,000 bonds to construct roads.

Dobson, N. C.—Surry county, Shoals township, votes August 10 on \$30,000 bonds to construct roads.

Dobson, N. C.—Surry county, Westfield township, votes August 10 on \$30,000 bonds to construct roads.

El Paso, Tex.—El Paso county votes August 17 on \$750,000 bonds to construct roads.

Palmetto, Fla.—City votes August 10 on \$16,000 bonds for streets, etc.

San Marcos, Tex.—City votes August 17 on \$3500 bonds to improve streets.

Sinton, Tex.—San Patricio county, Aransas Pass district, will vote on \$75,000 bonds for road construction.

Starke, Fla.—City votes October 5 on \$16,000 bonds to pave streets.

Contracts Awarded.

Cuero, Tex.—Dewitt county awarded contract to grade, drain and gravel 9.1 miles of road in District No. 1.

Elizabethtown, Ky.—Hardin county awarded contract to build four miles of northern end of Dixie highway.

Georgetown, Ky.—Scott county awarded contract to construct 24 miles of State-aid road.

Kaufman, Tex.—Kaufman County Justice Precinct No. 8 awarded contract to construct gravel and concrete roads and bridges; \$150,000 available.

Knoxville, Tenn.—City awarded \$43,251.37 paving contract.

Lonoke, Ark.—Lonoke County Road District No. 8 awarded contract for 4½ miles of macadam pike.

McKinney, Tex.—Collin county awarded \$575,000 contracts for 60 miles of road construction.

Norfolk, Va.—City awarded contract for 11,000 feet of granite curbing, etc.

Owensboro, Ky.—Davies county awarded \$24,500 contract to construct 4¾ miles of road.

Paris, Tex.—City awarded contract for two miles concrete base bituminous surface roads; \$50,000 available.

Polytechnic, Tex.—City awarded contract for 3400 feet of street paving.

Princeton, Mo.—City awarded contract for one mile of cement paving; \$30,000 available.

Towson, Md.—Baltimore county awarded \$50,000 contract for street paving.

Contracts to Be Awarded.

Baltimore, Md.—City receives bids until July 28 to grade, curb and pave with sheet asphalt and granite block, all on concrete base, sections of certain streets; 13,580 square yards of sheet asphalt, 3120 square yards of granite block and 1940 square yards of vitrified brick.

Broad Oaks, P. O. Clarksburg, W. Va.—Town opens bids until August 2 for 15,000 square yards of paving; \$32,000 available.

Houston, Tex.—Harris county will extend paved road seven miles; estimated cost \$30,000.

Kissimmee, Fla.—Osceola county receives bids August 2 for three miles of vitrified brick road with concrete curbing.

Knoxville, Tenn.—Knox county receives bids until July 28 to construct 88.11 miles of roads.

Marion, Ark.—Crittenden county will arrange to construct 10 miles of road.

McKinney, Tex.—City receives bids until July 29 for 15,000 feet combined curb and gutter, 23,000 square yards asphaltic concrete pavement and 6000 square yards brick pavement; estimated cost \$62,000.

Russellville, Ark.—Pope County Road Improvement District No. 1 opens bids August 1 to construct 20 miles of road; issued \$150,000 bonds.

Southern Pines, N. C.—City receives bids until August 2 to construct 1000 to 1500 square yards granolithic sidewalk.

Texas Good Roads Meeting.

The joint meeting of the County Judges and Commissioners' Association and the Texas Good Roads Association, which will be held at the Agricultural and Mechanical College of Texas, College Station, Tex., on August 5, 6 and 7, promises to be the largest road convention ever held in the State.

Touring parties are being organized by different automobile clubs of the State to make motor trips to the meeting and a special rate of one cent per mile has been granted by the railroads.

In addition to the convention, practically every road material and machinery company doing business in Texas has arranged for an exhibit. Provision has also been made so that a demonstration of bituminous macadam driveway, a gravel driveway and concrete sidewalks will be under construction during the meeting.

A well-balanced program has been arranged, and this will include the following addresses and papers:

Address of Welcome on Behalf of Agricultural and Mechanical College, Dr. W. B. Bizzel, president.

Address of Welcome on Behalf of Brazos County, Judge J. T. Maloney.

Response on Behalf of County Judges and Commissioners' Association, Judge George N. Denton, president.

Response on Behalf of Texas Good Roads Association, John W. Warren, president.

"Should a Highway Engineer or Competent County Road Superintendent Be Employed by Wealthier Counties When Only the Road and Bridge Fund Is to Be Expended on Roads?" Judge J. R. Davis, San Antonio.

"Are Special Road Laws Advisable?" Judge J. P. Pool, Victoria.

"Should a Commissioner Be Supreme in the Expenditure of Money in His Own Precinct?" James Miller, commissioner, Dallas.

County Convinct Labor: (a) "How Do You Handle Convicts?" (b) "Are They Satisfactory in Handling Road Graders?" (c) "Do You Use the 'Bat'?" (d) "Should Chains Be Used Indiscriminately?" Judge W. N. Tidwell, Wacahachie.

"Girls' Training School," Judge Quentin D. Corley, Dallas.

Address by Governor James E. Ferguson.

"Highway Legislation, State and County," A. N. Johnson, Bureau of Municipal Research, New York. Discussion by L. E. Boykin, U. S. Office of Public Roads; Senator H. L. Darwin of Cooper, Judge A. J. Eylers of El Paso and R. L. Potts of Waco.

"Maintenance of Improved Roads," Dr. L. I. Hewes, U. S. Office of Public Roads. Discussion by A. N. Johnson, Bureau of Municipal Research, New York; Lamar Cobb, State Highway Engineer of Arizona, and John B. Hawley, president Texas Association of Members of the American Society of Civil Engineers.

In addition, illustrated lectures and moving pictures

will be given, showing different methods of road construction.

One of the sessions will include the discussion of a bill for a State Highway Commission and the organization of County Highway Departments.

North Carolina Good Roads Meeting.

The annual convention of the North Carolina Good Roads Association was held in Asheville last week. The meeting was well attended, and the program provided for addresses and papers on various important phases of road construction and maintenance.

Special attention was paid to the great need of providing for the proper maintenance of the improved highways, and this subject was the keynote of the meeting.

Resolutions were adopted commending the creation by the State Legislature of a highway commission; suggesting that members of the association go before boards of commissioners or other proper authorities in the different counties and urge the providing of sufficient funds for the maintenance of improved highways; opposing the issuance of bonds for road construction unless provision is made for maintenance; urging the general assembly of the State to materially increase the appropriation for road work in 1917; commending the use of State convicts in the construction of public roads, and endorsing Federal aid in road construction.

All of the present officers of the association were re-elected, these including: President, Henry B. Varner, Lexington; secretary, Dr. Joseph Hyde Pratt, Chapel Hill; treasurer, Joseph G. Brown, Raleigh; director, D. Tucker Brown, Raleigh.

Over \$1,000,000 for Highway Improvement in One Southern County.

Hamilton county, Tennessee, which is one of the most active in the country in highway improvement, continues its good work this year by undertaking work involving an expenditure of over \$1,000,000.

It has already completed work costing \$128,000, and now has under construction additional work costing \$896,500. This latter work includes the big Market street bridge at Chattanooga, which alone will cost \$700,000.

In the design and construction of its highways and bridges Hamilton county has set a high standard, all of its work following the most approved standards of the day.

\$715,000 for Roads and Bridges.

Pinellas County Commissioners, Clearwater, Fla., have determined final plans for their extensive highway improvements recently under consideration. They have called an election for August 17 to vote on \$715,000 bonds for constructing roads, for ratifying a contract with the Edwards Construction Co. of Tampa at \$616,578.13 to construct 55.99 miles of brick roads, and to provide for other roads, increasing that miles to 68. The accompanying bridges will cost about \$45,000.

The Shawinigan Plant.

Plans and specifications have been completed, bids opened July 22, for erecting the plant of the Shawinigan Electro Products Co., P. H. Falter, general manager, Baltimore. The plant will be located adjoining the substation of the Pennsylvania Water & Power Co. at Orangeville, near Baltimore. It may be briefly outlined as follows: 70x35-foot main building; 30x30-foot bins; concrete foundations and footings; steel framing; roof of corrugated iron, coated with asbestos; concrete floor; coal dryer; unloading hopper; storage bins; conveying machinery; all the foregoing under a general contract; electric overhead monorail system and electric furnace under separate contract. The initial construction provides for one electric furnace and a daily capacity of 40 tons of silicon rock, 20 tons of coke and 40 tons of iron ore, the output to be calcium carbide. About \$150,000 will be the cost of the initial plant.

Extending the Market for Virginia Apples.

Charlottesville, Va., July 15.

Virginia apples were sold in the Panama Canal Zone for the first time during the past season, the market agent of Southern Railway having put the growers in touch with the purchasing department of the Panama Railroad, which supplies food products to the population throughout the zone. Many carloads of pippins and winesaps from orchards along the Southern Railway, north and south of Charlottesville, were sent to the Isthmus, weekly shipments having varied from 150 to 500 barrels.

Despite the tropical weather, the Virginia apples reached Panama in excellent condition, and gave such entire satisfaction to consumers that growers have been assured another permanent export market. This new market was particularly valuable to the Virginia growers, coming in a year when prices were relatively lower on account of interference with the usual exports to Europe, and market agent of Southern Railway has received a number of letters expressing appreciation of this practical aid extended to growers.

Good Roads Day in Tennessee.

The people of West Tennessee have set aside July 29 as the day when thousands of workmen and teams will co-operate to change the old existing Indian trail between Paducah, Fulton and Memphis into a standard highway. The movement has met with great enthusiasm by those along the route of this highway, and it is estimated that between 15,000 and 20,000 men will offer their services, and 5000 teams will be available.

\$1,000,000 for Shipbuilding Improvements.

Two weeks ago the MANUFACTURERS RECORD told at length of the shipbuilding activities of the Maryland Steel Co., accompanying the facts with interesting photographic views in and around the plant at Sparrows Point. It can now be authoritatively stated that the company has determined upon an expenditure of \$1,000,000 for improvements in its marine department. New construction required will be undertaken and new machinery will be ordered as soon as the details have been determined, these particulars being now under consideration.

More Double Track.

New double track extending from immediately north of Huffman, Tenn., to just north of Sunbright, Tenn., nearly 3 miles, has been placed in service on the Cincinnati, New Orleans & Texas Pacific Railway, giving continuous second main track between Glen Mary and Sunbright, Tenn., for 8.2 miles. With this new track the company will have a total of 129 miles in use between Cincinnati and Chattanooga.

Official Changes at Birmingham.

J. H. Stanfield has been promoted to be general superintendent of the Southern Railway at Birmingham, Ala., for the Southern district, to succeed C. L. Harris, resigned, and H. H. Vance has been appointed superintendent of the Birmingham division to succeed Mr. Stanfield. B. Haggard is appointed superintendent of terminals at Birmingham, succeeding Mr. Vance.

For Manufacturing Press Cloth.

Details have been decided for the oil-press cloth mill recently mentioned as to be established at Augusta, Ga., by Wm. A. Lee, lately of Brooklyn, N. Y. Mr. Lee has a 320x36-foot brick building in which he will install mill machinery costing \$8000, a 30 horse-power electric motor, belt drive from main shaft, etc.

MECHANICAL

Illustrations and descriptions having news value pertaining to developments in machinery, mechanical devices and inventions will be considered for use in this department.

Traction Wheel Locomotive Crane.

A small traction-wheel locomotive crane with clam-shell bucket for loading motor trucks and wagons is now built by the Davenport Locomotive Works, Davenport, Iowa. It is driven by a gasoline, kerosene or steam engine, or electric motor. On account of its light weight it is said to be enabled to travel on standard wheels over ordinary good, hard roads without the use of plank, but for work over soft ground caterpillar wheels are provided.

Besides being constructed with the ordinary rotating, propelling and hoisting mechanism usually found on cranes, it is equipped with a device by which the operator controls the steering mechanism and travel brakes from the operator's platform.

Although primarily designed for unloading gondola cars on steam tracks and loading trucks in coal and building-material yards, they are said to be found useful to contractors unloading material for country roads, as their ability to travel from place to place under their own power adapt them for service on the average country switch track. They are also used about lumber yards and various plants which require a locomotive crane and do not have track facilities for a railroad crane. By attaching an electric magnet the crane can be used for handling scrap iron, etc.

Large Diameter Corrugated Pipe.

The American Spiral Pipe Works, P. O. Box 485, Chicago, whose plant is situated at 14th street and Forty-eighth avenue in that city, is making some large-diameter lap-welded exhaust steam pipe which is illustrated herewith. The pipe has slight corrugations to provide additional stiffness under vacuum service, thus giving a factor of safety much greater, it is stated, than the plain pipe. This particular product is of 66 inches diameter and three-eighths of an inch thick, the corrugations being on eight-inch centers, about one-half inch deep, with seamless forged steel flanges attached.

While corrugated pipes and flues have been used for



AMERICAN SPIRAL CORRUGATED PIPE.

many years for internally-fired boilers, sustaining the full boiler pressure on the outside of the flues, the American Spiral Pipe Works believes it has produced something new by adapting slight corrugations in large-diameter pipe for vacuum service. This, it is said, permits of the use of lighter pipe than the plain pipe in cases where there are external strains from such service, and the corrugations are so slight that their resistance to the free passage of steam is practically negligible.

Southwark-Harris Valveless Engine.

An event of importance to the marine field generally marked the recent formal trip on the Delaware River of the motor yacht Southwark, owned by C. P. Vauclain of Philadelphia, since the craft is the first to be equipped with an engine of the new Southwark-Harris type. During the cruise the 98-foot yacht, which has a 16-foot beam and 7-foot draft, is reported to have easily maintained a speed of 12 miles an hour. It proved directly reversible from full speed ahead to full speed astern within five seconds, and the engine started and



DAVENPORT LOCOMOTIVE CRANE.

reversed under full load, and also its ability to develop full power within 10 seconds of starting from stone cold is said to have been proved. Fuel oil costing 2½ cents a gallon was consumed in operation at the rate of 7½ gallons per hour. The engine as installed on the Southwark has four cylinders producing an indicated horse-power of 240 and a brake horse-power of 150. Weight of the engine, including flywheel, is 24,000 pounds.

Essential parts involved in the Diesel principle and their sequence of operation are embodied in the Southwark-Harris engine. This engine, however, further embodies features which are claimed to simplify both the construction and operation, as well as increase the operating efficiency of the engine.

Feature of chief interest is the scavenger pump, which, in addition to scavenging, performs other functions. The scavenger pump is an enlarged extension of the main piston, working in its own cylinder below the working cylinder. The normal function of the step piston is to draw in a charge of fresh air on each downward stroke and on the upward stroke deliver it to the adjacent working cylinder through a manifold. Since the cylinders are arranged in pairs, the step piston of each clears the working cylinder of the other.

In addition, the step piston is employed for starting or reversing the engine on air. On moving the starting lever, either ahead or astern, each scavenging cylinder immediately is converted into an air motor. Suction and delivery valves are cut out automatically, the air starting valves open automatically and compressed air enters the cylinder and operates the step piston. On continuing the movement of the handling lever, atomizers supply fuel to the working cylinders, and thus the engine begins operating on fuel. At this instant in the cycle of operations, therefore, the engine is being operated both by oil and by compressed air. It is customary, after starting, to operate the engine on fuel only, although, if desired, the power may be augmented by consuming both compressed air and oil at the same time.

In the Southwark-Harris engine the lowering of the temperature when high-pressure air is admitted into the working cylinders is claimed to be effectively eliminated by the use of the step piston. Incidentally, each scavenging piston has a greater area than each of the main pistons, thus permitting the engine to be started under load, with air at 175 pounds pressure instead of at the usual pressure of 800 to 1000 pounds.

Another feature said to be made possible by the use of the step pistons is that while starting on air, the atomizer valves do not operate until the operator en-

gages them, and consequently the engine is provided with none of the usual by-pass valves. Each cylinder is provided with only one cam, which is employed for operating the atomizer. Scavenging air is admitted to the working cylinder through ports in its circumference and the exhaust gases pass through ports located opposite the scavenging ports. These ports are so placed that the piston opens and shuts them at the correct time during its stroke. Another feature is that each step piston, being subject to very little expansion and construction, may fit rather snugly in its cylinder. It thus acts as a guide and crosshead for the working piston, taking the side thrust of the working piston and keeping the wristpin away from the hot working piston. Air drawn in by the scavenging pumps helps to cool the working piston, the air itself being heated slightly at the same time. As a result, this scavenging air never enters the working cylinders cold.

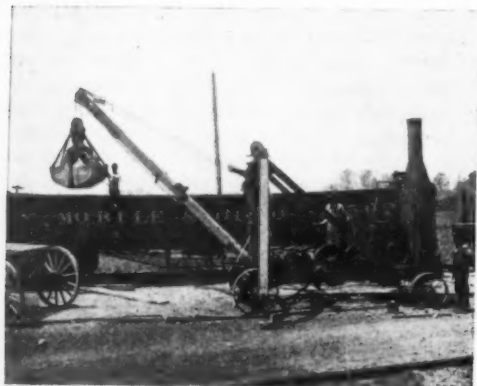
Reversing of the engine is accomplished by moving one rod on each cylinder, which can be done by hand without the use of compressed air, the same wheel or lever which admits the starting air and the fuel controlling these rods. The governor is of the centrifugal type acting directly on the fuel pumps by varying the strokes of all the pumps at once. The speed of the engine may be varied instantaneously, the governor all the time maintaining complete control. A feature is that the governor may be set to any speed before starting the engine, and when started the engine will come to this predetermined speed and remain there. This feature is of especial advantage in the case of a heavy head sea with the engine racing.

The Southwark-Harris engine was invented by Leonard B. Harris, and is being manufactured by the Southwark Foundry & Machine Co. of Philadelphia, which has been granted the United States license by the Harris Patents Co., Philadelphia. The engine may be operated on any grade of fuel or crude oil having a gravity of 18 Baum or more without preheating. It can be made of any size unit desired, and is recommended for use on tugs, police, pilot and fire boats, light ships, ice patrols, submarines and passenger and auxiliary vessels, etc. The use of the engine in small sizes also is recommended for driving electric generator sets on large passenger vessels, battleships, etc. Stationary type of the Southwark-Harris engine is used to advantage in supplying power for railroad motive work, in stationary power plants and for general power and lighting purposes.

Byers "Baby" Excavator.

Substantial construction of the operating and propelling mechanism, wheels, frame, etc., of the No. 331 "Baby" excavator manufactured by the John F. Byers Machine Co. of Ravenna, O., is one of the contributing factors in the success of this light-weight self-propelling excavator.

Using a half-yard clamshell bucket, the capacity of the machine is said to be 20 to 40 cubic yards per hour. The propelling mechanism enables the excavator to be transferred from one job to another at the rate of about



"BABY" EXCAVATOR UNLOADING CRUSHED STONE.

200 feet per minute. Used as a derrick car, a capacity of two tons on a 20-foot boom is obtained.

Specifications given for the No. 331 "Baby" excavator are: Height, 12 feet; width, 9½ feet; length, 15 feet, and weight 9 tons, including bucket; frame and mast of structural steel; 20 to 25-foot boom, using a Byers boom swinger and bull wheel; Byers vertical

boiler, 4200 pounds pull vertical type engine, double-drum geared hoist, large blocks and sheaves, with Byers self-lubricating bushings, nine-foot gauge steel truck mounting; sprocket and steel chain propelling mechanism and hand wheel and worm gear steering mechanism.

Other products manufactured by the John F. Byers Machine Co. include hoisting engines, derrick cars, derrick fittings, builders' elevators, boilers, wire rope, blocks and sheaves, with self-lubricating bushings, hand-power hoists, etc.

Illumination of Charleston, W. Va.

One of the first installations of the new type of pendant luminous arc lamps was recently made at Charleston, W. Va. The lamps were manufactured by the General Electric Co., and are equipped with prismatic glass refractors. The system of lighting in this city may be divided into three classes—"White Way," or ornamental lighting, in the business section; intermediate lighting in the residential section, and suburban lighting.

In the "White Way" section are installed 62 four-ampere ornamental luminous arc lamps, using high efficiency electrodes and equipped with fine texture Alba globes. The lamps are mounted on ornamental brackets manufactured by the Electric Railway Equipment Co. The poles are spaced approximately 120 feet apart on each side of the street, and are staggered. With this spacing a wonderfully well-diffused and brilliant daylight effect is produced, with an entire absence of



ORNAMENTAL LUMINOUS ARC LAMPS IN BUSINESS SECTIONS OF CHARLESTON, W. VA.

shadows, and on account of the peculiar shape of the globe, considerable light is projected upward, which illuminates the front of the buildings from the pavement to the cornice. This soft and well-diffused distribution of bright light is particularly effective and practical for business sections.

In the residential sections and throughout the greater part of the city pendant luminous arc lamps with refractors and operating at four amperes are employed. These are hung from 22 to 25 feet above the street at street intersections, which spaces the lamps from 300 to 400 feet apart. The refractor type of lamp, on account of its extensive distribution of light, is especially adapted to such spacing and produces an even illumination on the street surface.

In the remaining outlying portions of the city and in suburban sections, where the use of large units is not warranted, low wattage series incandescent lamps are employed, mounted on brackets and equipped with radial wave reflectors. The entire system is operated from General Electric Co. 50-light double-tube series rectifier sets.

Activity at N. & G. Taylor Works.

The N. & G. Taylor Company, Philadelphia, which recently added to its open-hearth department and almost doubled the steel-making capacity of its plant at Cumberland, Md., did not expect to have this additional equipment in operation until the next period of high

activity in the steel trade. This increase was provided as reserve capacity for the future. On June 28 the company found it necessary to put in operation its last available unit of capacity in the steel-making department, so that it is now operating 100 per cent, there, with every prospect of continuing for the remainder of the year. This improvement is due to domestic trade rather than to war orders, although the influence of these upon the general situation has been strong.

Wells More Than a Mile Deep.

The deepest well in the world is in Upper Silesia, in the German Empire. It is a diamond-drill hole in a coal field and is 7350 feet deep. A well in the United States which may go deeper, according to the United States Geological Survey, is four miles northwest of McDonald, Pa., and about 15 miles west of Pittsburgh. This well, which is being sunk to the Medina sandstone—a bed that elsewhere contains oil and gas—is now 7174 feet deep. Some gas and oil were struck in the upper part of the well. Between the depths of 6830 and 7100 feet rocks bearing rock salt and salt water were encountered. These are regarded as of Salina age, the same as those carrying rock salt in Western New York. The temperature in this well at the depth of 6775 feet, as recently determined with great accuracy, is 145.8 degrees Fahrenheit.

At Derrick City, McKean county, Pennsylvania, near Bradford, there is a well 5820 feet deep, which is probably the second deepest well in the United States. Another deep well is on Slaughter Creek, Kanawha county, West Virginia; it is 5595 feet deep. It penetrated a sandstone at 5030 to 5050 feet, and from this depth to the bottom, a distance of 545 feet, the well is in limestone. Near West Elizabeth, Pa., there is another well 5575 feet beneath the surface, penetrating into a black shale. Another deep well is being drilled at Gaines, Pa. This has already reached a depth of 5500 feet. Deep-well drillers in this country, of course, employ the most improved and effective rigs, but one of the most remarkable of wells, reaching a depth of 3600 feet, was drilled for petroleum in Western China by means of such crude appliances as a cable made of twisted strands of rattan.

Fruit Farms Near Asheville.

[Special Correspondence Manufacturers Record.]

Asheville, N. C., July 16.

The Ray-Campbell Company, of which John Hurshey is manager, and which has its headquarters here, is planning a unique and interesting development of 400 acres it owns near here.

The developers are now cutting the timber from the tract, and it is hoped that it will be finished by this fall. The money realized from the sales of timber will be immediately used for developments of the property. It is located within four miles of Asheville's public square and within a half-hour's walk of one car line and 20 minutes of another.

When the timber has been cleared from the land it will be cut into tracts of 5 to 15 acres each. Modern improvements will be placed within easy reach of the purchasers. Then each tract or "farm" will be planted in apple, peach and cherry trees. The land has been so laid out that all the houses may be built on a ridge, which borders the property in horseshoe shape. This will leave room in the center of the area for a small artificial lake to be constructed.

Automobile Supplies, Etc.

R. Bailly & Co., 66 Route de Houilles, Bebons, Paris: "I have a factory in the environs of Paris, and am in active work with the principal dealers in central heating installations and equipments. The articles at present of great interest to my clients are specialties and necessities for the automobile industry. If you could give me the address of suitable people I would appreciate it. I think your correspondents ought to take up the matter and make a fixed price free at Paris or at the point of the port of departure. I have very considerable stock of merchandise here, of supplies for journeymen and day laborers."

Construction Department

IN ORDER TO FOLLOW UP

Properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be written on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will generally be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur, as our reports are often published before new companies are known and before they have any established office for the receipt of mail.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

DAILY BULLETIN

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year.

All advertising contracts in the Manufacturers Record for three months or longer include a subscription to the Daily Bulletin for the contract period, as well as a subscription to the Manufacturers Record.

BRIDGES, CULVERTS, VIADUCTS

Ark., Eureka Springs.—Carroll County Comms. contemplate constructing steel bridge. (See Road and Street Work.)

Ga., Leesburg.—Lee county voted \$7500 bonds to build bridge. Address County Commissioners. (See Road and Street Work.)

Ga., Savannah.—Chatham county, Oliver T. Bacon, Chrmn. Comms., contemplates voting on \$375,000 for roads and bridges. (See Road and Street Work.)

Ky., Lexington.—Louisville & Nashville R. R., W. H. Courtenay, Ch. Engr., Louisville, has plans for completion of 5 approaches to Jefferson and Cemetery bridges; under contract with city for proposed construction of 2 bridges, railroad is to complete approaches and city pay half of cost; roadways of approaches to be resurfaced with asphalt; sidewalks and handrails of concrete.

La., St. Francisville.—West Feliciana Parish Police Jury, C. T. Toorain, Clerk, will open bids July 21 to build several concrete and steel bridges, costing about \$31,000; bidders to supply plans. (Lately noted as crossing Thompson's Creek, Tunica Bayou, Big Bayou Sara Creek and Alexander's Creek; bridge over Thompson's Creek to be built jointly by West and East Feliciana parishes.)

Mo., Independence.—Jackson County Comms. let contract John T. Coughlin of Kansas City at \$21,383 to construct viaduct over Chicago & Alton R. R. tracks.

Mo., Kansas City.—Union Pacific System (R. L. Huntley, Ch. Engr., Omaha, Neb.), Chicago, Rock Island & Pacific Ry. (C. A. Morse, Ch. Engr., Chicago, Ill.) and Metropolitan Street Ry. of Kansas City will build viaduct at 18th St. and Muncies Blvd.; city authorities let contract for fabrication and erection of steel to American Bridge Co., 30 Church St., New York; viaduct to be 1383 ft. long; steel deck and through spans of various lengths up to 100 ft.; concrete piers and 224 lin. ft. reinforced concrete retaining walls.

N. C., Grimesland.—Pitt county will construct reinforced concrete bridge across Chicod Creek near Grimesland; County Comms., Greenville, receive bids until Aug.

2; Brascoe Bell, County Clerk. (See Machinery Wanted—Bridge Construction.)

N. C., Mount Airy.—Surry County Commissioners, J. B. Sparger, Chrmn., will erect double-span bridge across Fishers River, Dobson township, and 3 smaller bridges in Pilot township; bids July 21. (See Machinery Wanted—Bridge Construction.)

N. C., Salisbury.—Rowan County Comms. let contract Virginia Bridge & Iron Co., Roanoke, Va., at \$3369 on steel for 9 bridges after plans by Camden Iron Works, Selma, Va.

Okla., Ada.—Pontotoc County Comms. will call election to vote on bonds for bridge construction; A. L. Miller, County Clk.

S. C., Beaufort.—Beaufort county will erect \$80,000 bridge; authority has been granted and commission appointed; Frederick H. Christensen interested; engineer not employed. (See Machinery Wanted—Bridge Plans.)

Tenn., Chattanooga.—Hamilton County Court authorized County Finance Committee to issue (when advisable) \$400,000 bonds to construct bridge across Tennessee River to connect Chattanooga with Moccasin Bend.

Tex., Houston.—City will construct 3 reinforced concrete bridges, 1 on Telephone Rd. and 2 on Humble St.; bids opened July 20; Ben Campbell, Mayor. (See Machinery Wanted—Bridge Construction.)

Tex., Kaufman.—Kaufman County Justice Precinct No. 8, Jas. A. Cooley, County Judge, let contract for bridge construction to Calahan Construction Co., Omaha, Neb. (See Road and Street Work.)

Tex., Runge.—Karnes county let contract to Alamo Construction Co., San Antonio, Tex., at \$35,750 to construct 37 bridges; from 30 to 80 ft.; 63 corrugated-iron culverts; L. L. Yates, Engr., Runge. (See Machinery Wanted—Road Machinery, etc.; also Culverts (Corrugated Iron).)

Tex., Longview.—Gregg County Comms. let contract Blodgett Construction Co. of Shreveport, La. (main office, Kansas City, Mo.), to construct 120-ft. steel bridge across Sabine River.

Va., Bowling Green.—Caroline county will construct reinforced concrete bridge 66 ft. long over South River; bids until July 30;

G. P. Coleman, State Highway Commr., Richmond. (See Machinery Wanted—Bridge Construction.)

W. Va., Hinton.—Summers county, Talcott and Greenbrier Dist., annulled call for lately-noted bond election for roads and bridges and will call another election; J. M. Carden, County Clerk.

W. Va., Martinsburg.—Berkeley county will construct reinforced concrete arch bridge over Mill Creek at Chapman's Ford, 4 mi. east of Bunker Hill, W. Va.; invites bids until July 28 on 2 designs; first design calls for structure with 70-ft. span of waterway, 16-ft. roadway and 16-ft. clear rise from bed of stream to arch ring; length of wingwalls 5 ft. on south end and 12 ft. on north end; side-walls or railings to be of concrete 3 ft. high and 8 in. thick; second design calls for structure with 2 spans of 25 ft. each, 16-ft. roadway and 16 ft. clear rise from bed of stream to arch ring, with same length and size of wingwalls and side-walls; E. A. Hobbs, Clk. County Court. (See Machinery Wanted—Bridge Construction.)

CANNING AND PACKING PLANTS

La., Napoleonville.—Walter Godchaux, Geo. S. Guion, Emil Sundberg and others are interested in organization of company with \$50,000 capital to build packing plant at Napoleonville or Donaldsonville; estimated cost \$30,000.

Tex., Brundage.—C. D. Puckett is interested in establishment of cannery. (See Machinery Wanted—Canning Machinery.)

Tex., El Paso.—J. C. Peyton of El Paso and W. B. Mandeville (Pres. Union Bank), Las Cruces, N. M., are promoting establishment of abattoir and packing plant.

W. Va., Huntington.—Berry-McCray Co. increased capital stock from \$50,000 to \$100,000; will bottle catsup in addition to fruit preserves and jellies.

CLAYWORKING PLANTS

Ala., Tuscaloosa.—Bricks.—M. J. Gregg and T. H. McMichael acquired Laycock brick plant and will build plant with annual capacity of 4,000,000 to 5,000,000 bricks.

Tex., Mexia.—Bricks.—Diamond Brick Co. of Ferris, Tex., secured option on 30 acres land and will build brick plant.

W. Va., Pence Springs.—Brick.—Greenbrier Shale Mfg. Co., capital \$25,000, inctpd.; will establish lately-noted plant; D. E. Lahey, Pres. and Mgr.; D. M. Meador, V.-P.; W. T. Ball, Secy.; Chas. E. Fox, Treas.; let contract to M. Noland to erect 78½x40-ft. ordinary-construction building; let machinery contract, cost \$590, for daily capacity 40,000 brick.

COAL MINES AND COKE OVENS

Ky., Hazard.—Blackwoods Coal Co., capital \$3000, inctpd. by Billie Baker, M. A. Petrey and A. S. Petrey.

Ky., Whitesburg.—C. F. Lowry and others purchased coal and timber lands on Rockhouse Creek for development.

Tenn., Chattanooga.—Fort Coal & Land Co., capital \$25,000, inctpd. by Eliza K. Tarver, John P. Fort, Jr., Francis Martin and others.

Tenn., Knoxville.—Mutual Service Coal Co. incorporated by J. J. Bryant, S. W. Dugan, L. G. Rogers and others.

W. Va., Chapmanville.—Cleveland Guyan Coal Co. inctpd. by N. S. Harris, Louis H. Wieber, J. C. Reasner and others.

W. Va., Glenville.—Lloyd Beeghley and Andrew Edmiston purchased coal properties in Gilmer and Braxton counties and contemplate development.

W. Va., Lillybrook.—Lillybrook Coal Co., capital \$150,000, inctpd. by Thos. H. Wickham, John R. Hornbrook, Wm. J. Smith and others.

CONCRETE AND CEMENT PLANTS

Tex., Houston.—Portland Cement.—Texas Portland Cement Co., F. R. Bissel, Pres., Dallas, Tex., will soon have plans completed by H. Struckmann, Consult. Engr., Kansas City, Mo., to build and equip plant; annual capacity, between 300,000 and 400,000 bbls.; 30 electrical H. P.; contemplates erecting Diesel engine power plant direct

connected with generators to furnish electricity; selected location on Houston Ship Channel between Houston and Harrisburg. (Lately noted.)

COTTON COMPRESSES AND GINS

Ala., Dothan.—Central Warehouse & Gin Co., capital \$75,000, organized by J. R. Young (Pres. Houston National Bank), John Sanders, W. C. Pilcher and others; will build cotton gin and warehouse.

Ala., Salem.—W. D. Bradley will establish gin to cost \$6000 to \$7000; install four 70-saw Lummus automatic air-blast gin; engine and boiler purchased; let contract Steel Products Co., 232-238 E. Broad St., Savannah, Ga., to erect steel in building; W. F. Caldwell, Supt. of Construction of Steel Products Co., to supervise erection of building.

Ark., Rison.—Rison Gin Co. will install machinery; will have 4 gin stands with combined daily capacity of 50 bales.

Ga., Pavo.—Planters' Gin Co. inctpd. with \$6000 capital stock by W. A. Mathews and others.

Okla., Ada.—Ada Gin Co., capital \$7500, inctpd. by F. A. Ward, C. C. Lea and W. E. Ross.

Okla., Stringtown.—Stringtown Gin Co., capital \$5000, inctpd. by G. C. Vittetoe, F. L. Walker, T. Vaughn and John H. Self.

COTTONSEED-OIL MILLS

Okla., Mangum.—Mangum Cotton Oil Mill Co., capital \$50,000, inctpd. by C. Van Valkenburgh, B. P. Siddons and R. K. Wootten, Jr.

DRAINAGE SYSTEMS

Ark., Pine Bluff.—Jefferson County Drainage Dist. No. 5 let contract McWilliams Bros. of Memphis at \$25,000 to construct 13 mi. drainage canals; issued \$40,000 bonds.

Fla., Parish.—Drainage Comms. will open bids about Aug. 2 on construction to drain about 40,000 acres in Manatee county; main canal and 9 laterals; total 23 mi.; about 1,300,000 cu. yds.; estimated cost, \$125,000; muck, sand and clay; lands for farming and vegetables; Engr., Chas. S. Hill, Palmetto, Fla.; previously noted in Jan. (Recent item—Manufacturers Record, July 8—partially incorrect.)

Fla., Tampa.—Withlacoochee Drainage Dist., Hiram McElroy, Engr., 410½ E. Franklin St., Tampa, contemplates \$2,000,000 expenditure for drainage of 360,000 acres, 556 sq. mi. in Sumter, Lake, Hernando and Pasco counties; construct 30 to 50 mi. canals ranging in width from 10 to 35 ft. and from 6 to 10 ft. in depth; main drainage to be into Withlacoochee and Palatka Rivers; land owners include Schroeder Land & Timber Co. of Milwaukee, Wis., which was lately noted as having surveys made by Hiram McElroy for drainage of 65,000 acres.

Ky., Morgantown.—Adamson ditch contract was lately let and construction by dredge is now progressing; about 50,000 cu. yds. earth to be removed. Address L. C. Flournoy, Atty.

Ky., Morgantown.—Dennis O'Nan Drainage Ditch contract will probably be advertised in about 30 days; require removal 650,000 cu. yds.; cleaning out, straightening, deepening and widening old 8-mi. ditch; floating dredge work; construction includes proposed cut-off to divert waters of old ditch to Ohio River, 5 mi.; cut-off to have fall of 5 ft. to mi. and 12 to 26 ft. depth for 1000 ft.; Norman Orcutt, Ch. Engr., Morgantown.

La., Gonzales.—New River Drainage Dist. canal work in Ascension parish is progressing; D. B. Gore Co., contractors, main office, Metropolitan Bldg., New Orleans, advise as follows: Was necessary to construct entire dredge; have nearly completed hull for large machine, and received several carloads machinery; expect to complete erection of this machine within next 6 weeks; also erecting 2½ machine at upper end of work, and started to build the hull; contemplate beginning to build this boat about Oct. 1; cleared about 10 mi. of 200-ft. right of way. (This drainage district, Leon Picard, Pres., noted in March as letting contract to D. B. Gore Co.; main ditch about 27 mi. long, 27 ft. wide and 6 ft. deep at upper end, and 65 ft. wide and 15 ft. deep at lower end; cost about \$175,000; drain 60,000 acres.)

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Miss., New Albany.—Big Creek Drainage Dist., S. R. Knox, Atty., New Albany, will construct canal containing about 276,822 cu. yds. excavation; lets contract Aug. 9; C. S. Cullens, Clerk. (See Machinery Wanted—Drainage.)

Mo., New Madrid.—St. John Levee and Drainage Dist. of Missouri issued \$400,000 bonds to cover construction of next 18 months; one-half to be transferred to Government and combined with Government allotment of \$80,000 for levee construction, for which contract has been let Oglesby Construction Co., Memphis; Drainage Dist. has let contract for portion of Ridge Levee and for clearing right of way along Low Level Diversion Ditch; Engr., Miller Engineering Co., Southern Trust Bldg., Little Rock, Ark. (Previously noted.)

N. C., Havelock.—S. E. Kilton of Newbern, N. C., is reported to drain land at Havelock and develop for farming.

N. C., Salisbury.—Drainage Comms. Second and Beaver Dam creeks, Rowan county, will remove about 250,000 yds. material to drain said creeks; bids July 31; C. M. Miller, Engr., Salisbury. (See Machinery Wanted—Drainage.)

S. C., Marion.—Catfish Dist. (J. M. Johnson, C.E., may be addressed) will drain 55,000 acres in Marion and Dillon counties for agriculture; canals through timbered swamp; 4 canals ranging from 14-ft. bottom to 45 ft., depth 6 to 9 ft., aggregating about 40 mi.; cost and date of opening construction bids not yet decided; Dist. previously noted formed. (See Machinery Wanted—Drainage Machinery.)

Tenn., Lexington.—Beech River Drainage Dist. Board let contract Tupelo Dredging Co. of Tupelo, Miss., at about \$20,000 to construct canal.

Tenn., Selmer.—Cypress Creek Drainage Dist. No. 9 (L. R. Lockman and others, Commissioners) will let contract Aug. 12 to construct drainage canal; 4.8 mi. long; H. P. Wood, attorney, Selmer.

Tenn., Selmer.—Big Snake Drainage Dist. let contract Swamp Dredging Co. of Tupelo, Miss., to construct drainage system; canal will be 12½ mi. long, 22 ft. wide at top, 12 ft. wide at bottom and 8 ft. deep; 4900 lin. ft. laterals; remove 351,266 cu. yds. earth; district comprises 5100 acres; J. C. Houston of Selmer is Atty. for Dist.

ELECTRIC PLANTS

Ala., Jackson.—Jackson Electric Co., capital \$5000, inceptd. by R. V. West, Doel Wright, C. W. Bogles and others.

Ala., New Decatur.—Alabama Power Co., Birmingham, is reported as contemplating extension of electric-light system; T. L. Beauchamp, local Mgr.

Ala., West Blocton.—Alabama Power Co. of Birmingham applied to Town Council for franchise to supply electricity for lighting and power; E. M. Bishop, Town Clerk.

Ark., Marmaduke.—City granted franchise Crystal Ice Co. of Paragould to furnish electric light and power.

Fla., Coolidge.—City votes Aug. 16 on \$4500 bonds to construct electric-light system. G. T. Knight, Mayor.

Ky., Hazard.—Howard N. Eavenson and Edw. O'Toole of Gary, W. Va., and Baltimore capitalists are financing company to acquire East Tennessee Coal Co.'s power plant and install additional unit; this installation to furnish power to coal operators during development and construction of large central power station and transmission system; central station of reinforced concrete and steel construction, equipment to include turbo-generator unit running condensing, automatic stokers, ash-handling equipment, etc.; will build transmission line from East Tennessee Coal Co.'s plant through Hazard to First Creek; direct through heart of coal fields with various branches; line of 40-ft. white chestnut poles with galvanized steel crossarms; report states more than \$250,000 will be expended; R. L. Cornell, Wootton & Morgan Bldg., in charge.

Ky., Smithland.—J. W. Watters, Lewis Conner and V. D. Pressnell will organize company to establish electric-light plant.

Md., Salisbury.—Eastern Shore Gas & Electric Co., Day & Zimmerman, Gen. Mgrs., 611 Chestnut St., Philadelphia, Pa., plans organization to acquire properties at Salisbury and other cities.

Miss., Grenada.—City Light & Water Dept. contemplates erecting regulating station for series street-lighting system; also proposes to purchase pumping machinery for delivery

direct into mains from deep wells; S. J. Alward, Supt.

Mo., Boonville.—Boonville Light, Heat & Power Co., capital \$75,000, inceptd. by W. A., R. A. and W. E. Sombart.

Mo., Cardwell.—City granted franchise Crystal Ice Co. of Paragould, Ark., to furnish electric light and power.

Mo., Keytesville.—Keytesville Electric Light & Power Co., R. W. Cropper, Mgr., engaged Henrich, Kent & Lowry Engineering Co., Reserve National Bank Bldg., Kansas City, to prepare plans and supervise engineering work for electric-light plant; equipment will consist of 30-kva. 3-phase 60-cycle 200-volt generator driven by gas engine, switchboard panel and series street-lighting panel; overhead material for distributing system will require 210 poles and 97,000 ft. wire; about 50 meters and 50 series tungsten street lamps. (Lately noted.)

Mo., Maryville.—Maryville Electric Light & Power Co. is negotiating with town of Conception Junction relative to constructing street-lighting system; proposes to construct 16 mi. transmission system; also negotiating with town of Pickering, 8 mi. from Maryville, relative to furnishing electricity.

Mo., Sedalia.—City Light & Traction Co. contemplates purchasing and installing 200-K. W. 2-phase rotary converter; also rebuilding distribution system.

Mo., Wellspring.—City purchased Wellspring Light, Power & Water Co.'s system and will operate.

N. C., Kinston.—City will expend \$40,000 to improve electric-light system. Address The Mayor.

Okla., Bixby.—City Council adopted resolution ordering election to vote on \$4000 bonds to construct electric-light system. Address The Mayor.

Okla., Bromide.—City contemplates constructing electric-light plant and waterworks. Address The Mayor.

Okla., Kaw.—City contemplates constructing electric-light system. Address The Mayor.

Va., Lebanon.—Lebanon Light & Power Co. organized to construct electric-light system.

Va., St. Paul.—St. Paul Light & Power Co., capital \$5000, inceptd.; Sam Wilburn, Pres.; M. L. Hillman, Secy.-Treas.

FLOUR, FEED AND MEAL MILLS

N. C., Charlotte.—Allied Milling Co., capital \$100,000, inceptd. by A. M. Webb, J. R. Cherry and E. R. Buckner.

N. C., Raleigh.—Chas. Hardesty secured building and will expend \$3000 in remodeling as plant to manufacture molasses feed for cattle.

Okla., Ardmore.—Wm. O. T. Comer of Ardmore, Wm. Bollen of Marsden, Okla., and others are promoting erection of flour mill.

Okla., Vinita.—Vinita Milling Co., capital \$8000, inceptd. by Claude Freeman, W. H. Clark and S. E. Wallen.

FOUNDRY AND MACHINE PLANTS

Md., Baltimore.—Canning Machinery.—Ameri-Can Sealing & Mfg. Co., 708 American Bldg. (lately noted inceptd. with \$300,000 capital stock), completed organization; Jos. M. Frederick, Mgr.; has not determined details for plant; will install engine lathes, shapers, millers, grinders, drill presses, power presses, etc., costing about \$10,000; will manufacture can-sealing machines, cans and tops. (See Machinery Wanted—Machine Tools, etc.)

Mo., St. Louis.—Machine Shop.—Gravois Foundry & Mfg. Co., capital \$35,000, inceptd. by Isaac Jones, Frank J. Kroupa, Thos. C. Gundelfinger and others.

N. C., Winston-Salem.—Machinery.—Normalair Co., capital \$50,000, inceptd. by A. H. Bahnsen, Fred F. Bahnsen and others.

GAS AND OIL ENTERPRISES

Md., Baltimore.—Natural-gas Supply.—Columbia Gas & Electric Co. (A. B. Leach, Pres., New York) of Cincinnati, O., is reported as planning to furnish natural gas (from Standard Oil Co. properties in West Virginia field) to Baltimore, Washington, Richmond and other cities; company advises it can make no statement at this time; several years ago it was understood capitalists interested in Columbia, Standard Oil and other corporations proposed piping natural gas to Baltimore, etc., possibly using (for distribution in Baltimore) gas mains of Consolidated Gas, Electric Light & Power Co.

Okla., Chickasha.—Grady Oil Co., capital \$60,000, inceptd. by F. C. Hall, J. W. Richburg and E. C. Burton.

Okla., Oilton.—Monitor Oil Co. will rebuild burned oil tanks.

Okla., Oil City.—Creston Oil & Gas Development Co., capital \$10,000, inceptd. by Geo. W. Craffee, Jr., and Geo. W. Craffee of Oil City, Geo. W. Hitchcock of Kansas City, Mo., and others.

Okla., Oklahoma City.—G. S. O. & G. Co., capital \$10,000, inceptd. by John R. Dickinson, E. Hammond Jones and M. F. Owens.

Okla., Oklahoma City.—Poorman Oil Co., capital \$50,000, inceptd. by C. H. Cameron and B. L. Carney of Oklahoma City and J. T. Dickinson of Edmond, Okla.

Okla., Tulsa.—U-K Drilling Co., capital \$2500, inceptd. by J. T. Klester and C. F. Robertson of Tulsa and F. B. Ufer of Kansas City, Mo.

Tex., Dallas.—Chappell-Jones Oil Co., capital \$7500, inceptd. by J. G. Chappell, Fred Chappell and T. N. Jones.

Tex., Houston.—Valley Oil Co., capital \$10,000, inceptd. by P. M. Granberry, E. H. Jackson and F. L. Phair.

Tex., San Antonio.—Somerset Oil Co., capital \$12,000, inceptd. by C. Kurz, John A. Kerr and E. W. Smith.

Tex., Waco.—Waco Central Texas Oil Co., capital \$15,000, inceptd. by L. Migel, C. C. Shumway and R. L. Danna.

ICE AND COLD-STORAGE PLANTS

Ga., Blakely.—City voted \$10,000 bonds to establish ice plant. Address The Mayor. (Lately noted.)

La., Arabi.—National Fish, Game, Produce & Ice Co., 417 Audubon Bldg., will construct and equip cold-storage plant at Arabi. (See La., New Orleans.)

La., New Orleans.—National Fish, Game, Produce & Ice Co., 417 Audubon Bldg., organized with F. F. Philibert, Sr., Pres.; J. J. Russell, V.-P. and Mgr.; will erect cold-storage plants at Carrollton, Arabi and New Orleans; cost \$250,000; open building construction bids Oct. 1; open bids Sept. 1 on ice-making and refrigerating machinery, cost about \$150,000, divided between 2 plants; daily making and refrigerating machinery, cost storage; Ralph W. Lees, Natchez, Miss., Constr. Engr.; lately noted inceptd., capitalization \$250,000. (See Machinery Wanted—Ice and Refrigerating Machinery.)

Tenn., Memphis.—Memphis Union Storage Co. let contract Irwin & McGuire to build cold-storage warehouse.

Tex., Harlingen.—Gulf Coast Marketing Co., lately reported to build precooling plant, states: "We contemplate building a small cold-storage plant, the present idea being to install cold-air refrigeration"; A. L. Brooks, Pres.; W. W. Higgins, San Benito, Tex., V.-P.; E. J. Fitz-Gerald, Secy.-Treas.

Tex., Mission.—Mission Ice, Light & Water Co., capital \$30,000, inceptd. by J. A. Sadler, G. L. Jones and J. P. McEvoy.

Va., Broadway.—Sunny Slope Orchards, D. H. Zigler, Mgr., will erect cold-storage warehouse for fruits.

Va., Phoebus.—Phoebus Coal & Ice Co. re-organized with M. C. Armstrong Pres.; Richard M. Booker, Secy.; L. M. Newcomb, Treas. and Mgr.; plans improvements to plant.

IRON AND STEEL PLANTS

Ala., Bessemer.—Iron Furnace.—Tennessee Coal, Iron & Railroad Co., Birmingham, is proceeding with repairs to 2 furnaces at Bessemer; has not determined date when plants will be blown in.

Ala., Thomas.—Iron Furnace.—Republic Iron & Steel Co. (New York office, 115 Broadway) is proceeding with repairs to No. 3 furnace and expects to complete same before Sept. 1; date of blowing in will depend on market conditions.

Md., Sparrows Point.—Steel Plant, etc.—Maryland Steel Co. will expend \$1,000,000 for general improvements throughout shipbuilding department; has not decided any details.

LAND DEVELOPMENTS

Ala., Birmingham.—Magie Land & Development Co., capital \$2000, inceptd.; T. F. Wood, Pres.; J. A. Wood, V.-P.; C. A. Wood, Secy.-Treas.

Fla., Miami.—Bay Front Improvement Assn. let contract E. E. Collins for improvements along bay front from Miramar to city docks; plans call for completion of boulevard 100 ft. wide from Miramar to

docks; fill to average 65 ft. wide and about 3000 ft. long; seawall of rock, with top and slope finished in cement; canal about 30 ft. wide and 12 ft. deep on outside of wall; rock excavated to be used for seawall; entire development, including sewer system, paving, etc., estimated to cost \$100,000; Chas. G. Hancock, Engr. (Noted in Mich.)

Ky., Louisville.—Morrison Development Co., capital \$20,000, inceptd. by C. D. Morrison, L. M. Render and J. L. Smith.

Ky., Louisville.—Ozark Townsite Co., capital \$30,000, inceptd. by Tomasso J. Willett, Ezra H. Pleak and Margaret Pleak.

Mo., St. Louis.—Seventh Street Realty & Power Co., 211 N. 7th St., capital \$2000, incorporated by Jas. A. Stephenson, Thos. R. Plumridge and Horace G. Beedle.

N. C., Winston-Salem.—Buena Vista Co. organized with H. E. Fries, Pres.; J. W. Fries, V.-P.; A. H. Eller, Secy.-Treas.; will develop 250 acres in Forsyth county, west of Winston-Salem; suburban residences. (Lately noted inceptd. with \$300,000 capital.)

S. C., Charleston.—Sterling Development Co., capital \$10,000, inceptd. by R. S. White, J. A. Starfar and A. R. Rughelmer.

Tenn., Chattanooga.—Northside Development Co., capital stock \$5000, inceptd. by O. P. Darwin, J. D. Carlin, Jas. M. Adams and others; plans industrial town developments in Moccasin Bend territory.

Va., Norfolk.—Southland Corp., capital \$50,000, chartered; R. Fulton Powell, Secy., Stockton, Md.

Va., Portsmouth.—Westhaven Annex Corp., capital \$25,000, chartered; M. P. Parker, Pres.; F. Nash Bilisoly, Secy.

LUMBER MANUFACTURING

Ala., Franklin County.—Tennessee-Alabama Lumber Co., capital \$5000, inceptd.; W. W. Ransom, Pres.; H. D. Leneade, V.-P.; Chas. Trabue, Secy.-Treas.; all of Pulaski, Tenn.; purchased 1000 acres timber land in Franklin county and will manufacture hard-wood lumber.

Ala., Springville.—Winfield Lumber Co. purchased 5,000,000 ft. pine timber and will manufacture into lumber; install planing mill, dry kiln, etc.

Fla., Calhoun County.—Pine Burr Lumber Co., capital \$500,000, inceptd. with Philip N. Coleman, Pres., Savannah, Ga.; Bascom Parker, V.-P.; Hovel A. Smith, Secy.; R. C. Lubins, Treas.; owns 146,000 acres timber land in Calhoun county and will develop; install mills with daily capacity 150,000 ft.

Ga., Sirmans.—Henderson Lumber Co. of Ocala, Ga., purchased 20,000 acres timber land in Clinch county, and is reported to build mill at Sirmans with capacity 75,000 feet.

Ky., Whitesburg.—C. F. Lowry and others purchased coal and timber lands on Rockhouse Creek for development.

Miss., D'Lo.—Pinkbine Lumber Co., Wiggins, Miss., will develop timber land extending about 50 mi. east of D'Lo; estimated to contain 800,000,000 ft. long-leaf yellow pine; let contract (as lately stated) to Sawmill Construction Co., Real Estate Bank Bldg., Savannah, Ga., to design, build and equip plant; 4 main units for sawmill, with 10-hour capacity 200,000 ft. lumber; plans to provide for 250-ft. sawmill building, of steel and concrete, from 66 to 119 ft. wide; 500-ft. timber dock of wood, excepting section behind mill, which will be steel; 144x120-ft. planing mill of steel construction; 60-ft. green lumber assorter built chiefly of steel; steel-covered platform for loading cars; 120x72-ft. motor-driven machine shop, steel construction, equipped to repair logging locomotives, cars, mill machinery, etc.; boiler, engine and fuel house; machinery to include four 500 H. P. boilers, 200 H. P. open feed-water heater, open burner for fuel, 200 K. W. high-pressure condensing steam turbine and alternator, auxiliary set of 125 K. W. engine type generator directly connected to steam engine, concrete stack, pumping plant for pond water supply, etc.; saw and planing mills to cost about \$350,000; has contracted for most of machinery; E. C. Finkbine, Pres., Des Moines, Iowa; W. E. Guild, Mgr., Wiggins. (Recently mentioned.)

N. C., Murphy.—Valley River Lumber Co. (lately noted inceptd., capital \$50,000) organized; W. H. Woodbury, Pres.; S. Woodbury, Secy.-Treas.; purchased Murphy Furniture Mfg. Co.'s plant; will operate planing and dimension hardwood mill.

Okla., Alderson.—Mitchell Bros. Lumber Co., capital \$10,000, inceptd. by Sam W. Mitchell of Alderson, John H. Mitchell and Alfred R. Mitchell of Hartshorne, Okla.

Tenn., Memphis.—Gayoso Lumber Co. increased capital stock from \$100,000 to \$150,000.

Tenn., Memphis.—Gayoso Lumber Co. increased capital from \$100,000 to \$150,000.

METAL-WORKING PLANTS

Md., Frederick—Hinges, Locks, etc.—Enterprise Hardware & Mfg. Co., Harry Ebert, Pres., will establish plant to manufacture hinges, locks, etc.

Va., Roanoke—Metal.—Virginia Metal Corp., capital \$150,000, chartered; L. C. Stewart, Pres.; M. A. Quinn, V.-P.; Jas. E. Walker, Secy.-Treas.

MINING

Ala., Trussville—Silica.—Dr. S. W. Acton will develop silica deposits.

Ark., Boswell (not a P. O.)—Lead and Zinc.—Russell Shub, Joe and Jas. Gammon and Newt Cooper, all of Guion, Ark., organized company to develop lead and zinc mine 20 mi. from Guion.

Ark., Hot Springs—Zinc.—Arkansas Zinc Co. (lately noted inceptd., capital \$100,000) organized; C. Floyd Huff, Pres.; C. D. Harmon, V.-P.; J. R. Rust, Secy.; F. J. Stutesman, Treas.; Thos. H. Rea, Illinois Athletic Club, Chicago, Ill., Mgr. and Engr. in charge of construction and development; owns 320 acres zinc lands in Marion county.

Fla., Orlando—Lime.—Pineola Lime Co., M. M. Smith, Pres., and J. F. Ange, Mgr., will incorporate, \$100,000 capital, to develop lately-noted lime deposits. (See Miscellaneous Factories. See Machinery Wanted—Lime Machinery.)

Ky., Dawson Springs—Zinc and Lead.—Western Kentucky Smelting Co., capital \$30,000, organized with D. C. Roberts, Mgr.; will develop zinc and lead deposits; establish smelter at Dawson Springs to reduce carbonate of zinc.

Mo., Apex—Lead and Zinc.—Apex Mining Co. contemplates building concentrating plant.

Mo., California—Lead.—Wank Mining Co., 901 S. 10th St., St. Joseph, Mo., lately noted (under St. Joseph) inceptd., capital \$10,000, continues operation of plant with daily capacity 50 tons lead ore; develops 80 acres; Andrew Wank, Pres. and Treas.; Carl Wank, V.-P.; Emil J. Wank, Secy.; N. E. Keller, Mgr.

Mo., Joplin—Lead and Zinc.—R. S. & B. Zinc & Lead Co., capital \$200, inceptd. by Nathan Rosenberg, Abe Scherl, Laz Meyer and others.

Mo., Joplin—Smelting.—Cherokee Smelting Co., capital \$50,000, inceptd. by J. G. Starr and H. S. Miller of Joplin, C. M. Fenton of Columbus, O., and others.

Mo., Joplin—Smelting.—Cherokee Smelting Co., capital \$50,000, inceptd. by J. G. Battelle, J. G. Starr and C. M. Fenton.

Mo., Joplin—Smelting.—Nevada Smelting Co., capital stock \$40,000, inceptd. by Gordon Battelle, C. M. Fenton and H. S. Miller.

Mo., Joplin—Lead and Zinc.—J. Lewis reorganized company controlling lease on 18½ acres Fairview Cemetery land and will develop ore deposits.

Mo., Joplin—Lead and Zinc.—R. S. & B. Zinc & Lead Co., capital \$200, inceptd. by Nathan Rosenberg and R. L. Bullack.

Mo., Kansas City—Iron.—Johnson Furnace Co., capital \$10,000, inceptd. by Guy W. Johnson, Hazel E. Johnson and M. C. Roddy.

Mo., Kansas City—Limestone.—Prince-Johnson Limestone Co., capital \$75,000, inceptd. by John Prince, Fred Johnson and Geo. H. Cope.

Mo., Kansas City—Lead and Zinc.—Sparkler Mining Co., capital \$40,000, inceptd. by Edward Wilkinson, J. A. Kelly and R. O. Larson.

Mo., Licking—Zinc.—H. H. Clark of Kansas City will develop zinc mine; controls 1000 acres.

Mo., Joplin—Lead and Zinc.—Cave Springs Lead & Zinc Co. (address, John Carter, Carthage, Mo.) will develop 86 acres; daily capacity 5 to 6 tons 62 per cent. zinc.

Mo., Sarcoxie—Lead and Zinc.—Plymouth Smelting Co. will develop Plymouth mine; improvements reported to include 5 boilers, 50-ton mill, blacksmith shop, office, warehouse, etc.; estimated cost \$40,000; let contract to United Iron Works of Joplin.

Mo., St. Louis—Iron.—Ozark Iron & Furnace Co., capital \$60,000, inceptd. by E. J. Burton, Louis J. Winkle and Thos. H. Galbraith.

N. C., Hot Springs—Iron.—Shut-In Iron Mine Co. inceptd. with Anson G. Betts, Pres.-Treas.; Allen S. Hurlburt, V.-P.; both of Asheville; E. V. Correll, Secy.-Mgr., Hot Springs; will develop iron mines on

Shut-In Creek near Hot Springs; erected plant at mines for washing ore and constructed about 2 mi. of tramroad.

Okla., Henryetta—Smelter.—Geo. E. Nicholson of Kansas City, Mo., will build smelter.

Okla., Oklahoma City—Rock.—Pemela Rock Co., capital \$10,000, inceptd. by Scott Braden, Fred E. Thomas and W. R. Crusoe.

Okla., Oklahoma City—Zinc.—Royal Zinc Mining Co., capital \$40,000, inceptd. by Clinton M. Lane, Jas. O. Galloway and others.

Tenn., Mascot—Zinc.—American Zinc Co. plans construction of another mill of 500 tons daily capacity.

Va., Rocky Mount—Mica.—H. C. Field and Mr. Werner of Raleigh, N. C., are reported to have purchased Chestnut Mountain mica mine in Franklin county about 12 mi. from Rocky Mount, and will organize company with \$50,000 to \$75,000 capital to undertake development.

W. Va., Huntington—Lead and Zinc.—Frank Ellington, Frank B. Enslow, W. H. Cunningham and associates are reported as planning to purchase and develop 400-acre lead and zinc property.

MISCELLANEOUS CONSTRUCTION

Ala., Mobile—Pier.—Gulf Refining Co. let contract S. L. Christie of Mobile at about \$3000 to construct pier 230x20 ft. (Lately noted.)

Ark., Arkansas City—Levee.—Comms. Tensas, Chicot, Desha and Red Fork Levee Dist., decided to close gap in lower Red Fork levee; \$80,000 available.

Ark., Texarkana—Levee.—Miller County Levee Dist. No. 2 let contract Jas. T. Constant of Alexandria, La., at about \$100,000 to construct levee.

Fla., Miami—Seawall.—Bay Front Improvement Assn. let contract E. E. Collins to construct seawall of rock with top and slope finished in cement; also to dredge canal about 30 ft. wide, and 12 ft. deep on outside of wall; rock excavated to be used for seawall. (See Land Developments.)

Ga., Atlanta—Underpass.—Southern Ry., W. H. Wells, Chief Engr. Constr., Washington, D. C., is preparing plans and specifications for underpass of concrete and steel under Southern belt line leading from Angier into Bellgrade Ave.; estimated cost \$50,000.

Ky., Paducah—Memorial.—W. J. Abram let contract at \$4170 to build Abram memorial fountain to be erected in front of Carnegie Public Library; circular, with 15-ft. diam.; 13.5-ft. base with depth of 3 ft.

La., New Orleans—Wharf.—City will rebuild Julia St. Wharf and erect extension to Girod St. Wharf; Port Comms., Suite 200 New Orleans Court Bldg., receive bids until Aug. 11; J. Devereux O'Reilly, Engr., Suite 200 New Orleans Court Bldg. (See Machinery Wanted—Wharf Construction.)

La., New Orleans—Swimming Pool.—Albion Hotel Co. organized by L. A. Block (Pres. Mutual Liquor Co.) and others; plans to construct swimming pool 200x250 ft. and ranging in depth from 1 to 8 ft. (See Buildings Proposed, Hotels.)

Md., Cumberland—Swimming-pool.—M. J. Clark, 10 N. Liberty St., interested in proposed swimming-pool in amusement park; pool to be 40x120 ft., 4 ft. deep at one end and 10 ft. deep at other end; the building 60x150 ft.; reinforced concrete 4 ft. above ground, shingles and glass above; 100 lockers; 8 to 10 dressing rooms; estimated cost \$7000; wishes to engage architect. (See Machinery Wanted—Swimming-pool Plans.)

Miss., Vicksburg—Levee.—Comms. Third Mississippi River Dist., P. O. Box 404, rejected bids to construct 1,415,000 cu. yds. levee work; J. R. Slattery, Major, Engrs. (Call for bids lately noted.)

Mo., Independence—Subway.—Kit Colyer of Independence is lowest bidder at \$26,887 to construct subway under Missouri Pacific Ry. on 15th St. Rd.; Allen C. Southern, County Highway Engr. (Lately noted.)

Mo., New Madrid—Levee.—St. John Levee and Drainage Dist. of Missouri work is progressing; Oglesby Construction Co., Memphis, Contr. for levee construction; also contract has been let for portion of Ridge Levee, etc.; previously noted. (See Drainage.)

N. C., Durham—Granite Wall.—Trinity College will construct granite wall around campus. (See Road and Street Work.)

N. C., Wilmington—Pier.—Carolina Pier Co. inceptd. to build pier at Carolina Beach; 150 ft. of 550 ft. have been completed; W. A. McGowan, Pres.; J. W. Blake, V.-P.; Jos. J. Loughlin, Secy.-Treas.

Tex., Caldwell—Earthwork.—Burleson County Improvement Dist. No. 1 will construct about 360,000 cu. yds. earthwork in levees and small amount in drain ditches; bids until July 31; J. C. Nagle, Engr., Austin; R. S. Newson, Chrmn. Comms. (See Machinery Wanted—Earthwork.)

Tex., Houston—Wharf, etc.—City will construct wharf and cotton sheds; open bids July 23 on the wharf and sheds and 100,000 yds. dry excavation; estimated cost \$150,000; E. E. Sands, City Engr. (See Machinery Wanted—Wharf Construction, Excavation, etc.)

Va., Charlottesville—Electric Block Signals.—Southern Ry., W. H. Wells, Ch. Engr. Constr., Washington, D. C., will construct electric automatic block signal system covering 77.5 mi. of Washington-Atlanta line, as follows: Orange and Arrowhead, Va., 56 mi.; Elma and Amherst, Va., 18.5 mi.; Whitties and Danville, 23 mi.; erect at intervals of about 2 mi., 109 signals of upper quadrant, 3-position type; power furnished from substations at Charlottesville, Shipman and Danville; construct special transmission system.

MISCELLANEOUS ENTERPRISES

Ark., Newport—Grain Elevator.—Citizens contemplate installing grain elevator. Address H. E. L. McCollum, Secy. Board of Trade. (See Machinery Wanted—Grain Elevator.)

Ark., Paragould—Laundry.—Paragould Steam Laundry has plans for building; buff brick; 1 side of steel sash and glass; install laundry machinery; total cost \$20,000.

Ky., Ashland—Crematory.—City contemplates voting on bonds to build garbage crematory; Wm. Salisbury, Mayor.

Ky., Covington—Laundry.—Sunlight Laundry Co., capital \$50,000, inceptd. by A. G. Simrall, George P. Diehl and W. F. Simrall, Jr.

Ky., Maysville—Laundry.—Modern Laundry Co., E. 2d St. (lately noted inceptd., capital \$30,000), organized; W. T. Martin, Pres. and Mgr.; A. D. Cole, V.-P.; E. H. Roden, Secy.-Treas.; purchased laundry equipment, cost \$15,000.

Md., Baltimore—Ferry.—Harry B. Handley, Jr., 3001 Presbury St., and others plan organization of Fort McHenry & Broadway Ferry & Pleasure Boat Co. with \$50,000 to \$75,000 capital to acquire and improve ferry service between foot of Broadway and Locust Point and to operate motor boats between various points along harbor and Fort McHenry.

Miss., Hattiesburg—Grain Elevator.—Merchants' Grocery Co. has plans and specifications for grain elevator. (Noted in March.)

Miss., Laurel—Printing.—Laurel Daily Leader is having plans and specifications prepared for 3-story building for printing plant.

Mo., Kansas City—Grain Elevator.—Norris Grain Co. is reported to build grain elevator costing \$200,000.

Mo., St. Louis—Contracting.—Drees Building & Contracting Co., capital \$2500, inceptd. by Harry G. Drees, Wm. F. Drees and Edwin Drees.

Mo., St. Louis—Water Treating.—American Water Rectifying Co., capital \$25,000, incorporated by Jay M. Goldman, Herman Stifel, Arnold Stifel and others.

Mo., St. Louis—Printing and Stationery.—John S. Swift Printing & Stationery Co., capital \$2000, inceptd. by John S. Swift and Wm. C. Swift.

Mo., St. Louis—Grain Elevator.—St. Louis Ry. & Dock Co., W. J. Holbrook, Pres., will build docks (lately noted under Miscellaneous Construction), grain elevators, and freight depots in connection with 25-mi. railroad to be constructed; John T. Moore, V.-P., 812 Olin St.

N. C., Bridgeton—Transfer.—Bridgeton Transfer Co., capital \$10,000, inceptd. by G. A. Gaskins, H. M. Bunting and R. H. Lathinghouse.

Okla., Oklahoma City—Hardware.—Storm & Erickson Hardware Co., capital \$20,000, inceptd. by I. W. Erickson, H. O. Davis and J. H. Bollinger.

Okla., Oklahoma City—Engineering.—Midwest Engineering Co., capital \$10,000, inceptd. by E. P. Fitzpatrick, E. E. Gainer and Martha Fitzpatrick.

Tenn., Chattanooga—Construction.—Rogers Construction Co., capital \$2000, inceptd. by C. O. Rogers, H. L. Coggins and B. N. Albertson.

Tenn., Nashville—Water.—Nashville Tri-Pure Water Co. increased capital stock from \$10,000 to \$30,000.

Tenn., Woodbury—Transportation.—Woodbury & Murfreesboro Transportation Co., capital \$5000, inceptd. by W. F. Dickens, A. A. McFerrin, Harry Carter and others.

Tex., Mineral Wells—Transfer.—Mineral Wells Transfer Co., capital \$8000, inceptd. by C. E. Turner, L. E. Naman and W. A. Davidson.

Tex., Port Arthur—Marine Supplies.—Marine Supply Co., Merchants' State Bank Bldg., inceptd.; Francis G. McEwan, Pres. and Gen. Mgr.; S. B. Redmond, Secy.-Treas. (Names of incorporators lately incorrectly noted.)

Tex., San Marcos—Crematory.—City votes Aug. 17 on \$2500 bonds to purchase crematory. Address The Mayor.

Va., Chase City—Water Bottling.—Mecklenburg Medicinal Water Corp., capital \$100,000, chartered; Jas. O. Cobb, Pres., Danville; Jas. W. Gordon, V.-P., Richmond; Harvey Holleman, Secy.-Treas., Chase City, Va.

MISCELLANEOUS FACTORIES

Ala., Bay Minette—Creamery.—J. J. Farnsworth of Indianapolis, Ind., is reported to establish creamery.

Ark., Marshall—Marble.—J. Williams will install marble works.

D. C., Washington—Mechanical Appliances.—Self-Locking Bushing Co., capital \$200,000, inceptd.; Jas. Pettibone (representative Pettibone Bros. Mfg. Co., 608 Washington Loan & Trust Co. Bldg.), Pres.; Albert W. Weikert, Secy.; Harry Williams, Treas.

Fla., Miami—No-Damp Products Co. of Newark, N. J., is reported to build plant with daily capacity 10,000 gals.

Fla., Orlando—Pineola Lime Co., M. M. Smith, Pres., applied for charter, capital stock \$100,000, to develop lime deposit and manufacture lime; J. F. Ange, Mgr. (See Mining. See Machinery Wanted—Lime Machinery.)

Ky., Ashland—Reconstructed Stone.—Ashland Reconstructed Stone Co. inceptd. by Sam Collier, Wm. Irwin, W. B. Pelphrey and others; will build plant; purchased machinery.

Ky., Ft. Thomas—Moving-picture Films.—Highland Film Corp., Jas. T. Ford, Pres., Strand Theater Bldg., Cincinnati, plans construction as follows: Studio building of concrete, steel and glass with 140x90-ft. stage; carpenter shop, scenic artist studio and property-rooms adjoining; laboratory for developing, printing, drying, cutting, winding, assembling, inspecting and storage; outdoor stage 125 ft. square; garage for 4 automobiles and 3 auto trucks; stable for horses and other stock; carol of brick and concrete with concrete floors; fireproof film storage vaults for duplicates; power-plant building, near artificial lake, to furnish electricity for heating and lighting all buildings, etc.; Zettle & Rapp, Archts., Cincinnati. (Lately noted.)

Ky., Franklin—Dart Tobacco Co. of Richmond, Va., purchased Boys' Training School property and will remodel as tobacco re-handling plant.

Ky., Jeffersonton—Powder.—United Safety Powder Co. will replace plant reported burned.

Ky., Lexington—Coffee.—Bayless-Vaughn Co-operative Coffee Co., capital \$40,000, inceptd. by T. C. Bayless, B. W. Vaughn and T. B. Bayless.

Ky., Louisville—Brooms and Mops.—W. L. Martin Broom & Mop Co., capital \$25,000, inceptd. by William L. Martin, Luther Goose, Sr., and E. E. Kimbel.

Ky., Louisville—Tires.—Glenn Tire Co., capital \$3000, inceptd. by J. P. Glenn, Sam O. Wilkes, Jas. K. Jarvis and J. H. Walker.

La., Thibodaux—Moss Mattresses.—Chas. A. Badeaux and others contemplate establishment of moss mattress factory. (See Machinery Wanted—Moss Mattress Equipment, etc.)

Md., Baltimore—Syrup.—Volvo Corp., capital stock \$300,000, inceptd. by Irving C. Cockey, 120 E. Baltimore St.; Logan L. Mallard and J. Carroll Donohue; to manufacture syrups for soft drinks.

Md., Baltimore—Calcium Carbide.—Shaw-Ingan Electro-Products Co., P. H. Falter, Gen. Mgr., U. S. Fidelity Bldg., opens bids July 22 to erect plant for manufacture of calcium carbide at Orangeville, adjoining

substation of Pennsylvania Water & Power Co.; main building 55x70 ft.; bins 30x30 ft.; concrete foundation and footings; steel framing; roof corrugated iron coated with asbestos; concrete floor; equipment to include Ruggles coal dryer, unloading hopper, storage bins, conveying machinery, all under general contract; under separate contracts are electric overhead monorail system and electric furnace; total cost \$150,000; initial daily capacity will be 40 tons silica rock, 20 tons coke and 40 tons iron ore; output to be calcium carbide. (Other details lately noted.)

Md., Baltimore—Paper Boxes.—C. J. Youse Co. let contract to Walter E. Burnham, Law Bldg., Baltimore, to erect paper-box factory building at Saratoga and Holliday Sts.; 3 stories; 76x97.6 ft.; reinforced concrete; slag covering on concrete roof; steam heat; electric light and plumbing separate; cost about \$40,000; Archer & Allen, Architects, Central Savings Bank Bldg., Baltimore. (Noted in June.)

Md., Sparrows Point—Shipbuilding.—Maryland Steel Co. will expend \$1,000,000 for general improvements throughout shipbuilding department; will undertake new construction and order new machinery when particulars have been determined; now considering details.

Mo., Springfield — Harness. — Springfield Harness Co., capital \$25,000, inceptd. by M. L. Brownlee, R. M. Gadd and W. B. Bairman.

Mo., St. Louis—Children's Headwear.—Delmar Mfg. Co. increased capital stock from \$15,000 to \$60,000.

N. C., Wilmington—Bottling.—Wilmington Pepsi-Cola Bottling Co., 1416 Market St., let contract J. P. Crelley to build plant; corrugated iron; 24x84 ft.; concrete floor; concrete balcony for storage; cost, including machinery, \$5000.

N. C., Winston-Salem—Air Cooling, etc.—Normatair Co., capital \$50,000, inceptd. by A. H. Bahson, Fred F. Bahson, W. R. Davis and others to manufacture device for humidifying, heating, cooling, circulating and otherwise treating air in factories, residences and other buildings.

Okla., Checotah—Glass.—Checotah Glass Mfg. Co., capital \$60,000, inceptd. by John F. Weaver, H. H. Howard and A. C. Weaver.

Okla., Sapulpa—Glass.—Bartlett-Collins Glass Co., capital \$150,000, inceptd. by H. U. Bartlett, Geo. F. Collins and E. B. Rankin.

Okla., Shawnee—Chemicals.—Barlow Chemical Co., capital \$50,000, inceptd. by J. H. Barlow, Chas. Elliott and U. S. Hart.

Okla., Tulsa—Ice Cream.—Clyde G. Aid of Topeka, Kans., is reported to build ice-cream factory to cost \$60,000.

S. C., Charleston—Inked Fabrics.—South Carolina Ribbon & Carbon Co. organized with Geo. L. Lannan, Mgr.; affiliated with B. D. Emanuel & Co. of Muncie, Ind.; will establish plant at 407 King St. to manufacture typewriter ribbons, etc.; machinery reported purchased.

S. C., Florence—Bakery.—Ideal Steam Bakery Co., capital \$2500, inceptd. by E. V. Rothley and J. J. Kline.

Tenn., Chattanooga—Beverage.—Crown Beverage Co., capital \$5000, inceptd. by Henry Boerger, A. C. Norman, Fred Krause and others.

Tenn., Chattanooga—Bottling.—Crown Beverage Co., capital \$5000, inceptd. by Henry Boerger, H. C. Norman, Fred Krause and others.

Tenn., Memphis—Medicine.—Sa-Ker Pepsin Medicine Co., capital \$10,000, inceptd. by L. O. Read, H. G. Street, J. W. Norton and others.

Tenn., Knoxville—Acetylene Gas.—Knoxville Acetylene Co., 31 Denderick Bldg., capital \$15,000, inceptd. by E. C. Camp, Prest. and Treas.; Chas. W. Holm, V-P.; Alex. P. Watson, Secy. and Mgr.; machinery installed.

Tenn., Nashville—Moving-picture Device.—International Moving Picture & Film Co. inceptd. by E. H. Smith, C. Smith, D. D. Dixon and others, all of Watertown, Tenn., to manufacture device used in moving-picture theaters.

Tenn., Nashville—Tires.—Two-in-One Tire Co., capital \$1000, inceptd. by J. L. Kottler, N. Mainon, Alex. Frank and others.

Tex., El Paso—Lime.—New Process Lime Co., capital \$4500, inceptd. by J. M. Dudley, R. E. Hines and A. S. Marling.

Tex., Galveston—Shipyards.—J. P. McDonough, Propr. McDonough Iron Works, 2609 Ave. A, and associates let contract to Crandall Engineering Co., East Boston, Mass., for 1500-ton railway drydock; will at once begin to bulkhead and dredge slip. (Mr.

McDonough and associates lately mentioned as planning shipyards, etc.)

Tex., Overton—Remedies.—Modern Remedy Co., capital \$10,000, inceptd. by J. G. Motley, R. A. Barksdale and G. E. Kessi.

Va., Danville—Tobacco.—W. Y. Noel will remodel and equip old Sutherland factory as tobacco factory; expend \$4000.

Va., Herndon—Silo Supplies.—Hamilton Silo Supply Co., capital \$15,000, inceptd.; G. Henry Shryock, Prest.; W. G. Mills, Secy.

Va., Louisa—Stock and Poultry Food.—Virginia Stock & Poultry Food Co., capital \$15,000, inceptd.; L. F. Yancy, Prest., Gordonsville, Va.; J. F. Sargeant, Secy.-Treas., Louisa.

Va., Luray—Ice Cream.—John S. Strole of Elkton, Va., secured building 33x20 ft. adjoining Luray Ice Co.'s plant and will equip as ice-cream factory; daily capacity, 300 gals. ice cream.

Va., Richmond—Adding Machines.—Fractional Adding Machine Co., capital \$25,000, inceptd.; Jos. F. Leitner, Prest., Wilmington, N. C.; John F. Rhodes, Secy.-Treas., Newbern, N. C.

Va., Richmond—Films.—Virginia Feature Film Co., capital \$100,000, inceptd.; W. W. Sale, Prest.; Greenhow Johnson, V-P.; G. H. Tompkins, Secy.-Treas.

W. Va., Dunbar.—Pennsylvania Glass Co., Philadelphia, purchased Olney Dunbar Glass Co.'s plant and will install machinery, etc., costing \$30,000 to \$40,000.

W. Va., Hinton.—Greenbrier Shale Mfg. Co. (lately noted inceptd.) will manufacture bricks at Pence Springs, W. Va. (See Clay-working Plants, W. Va., Pence Springs.)

MOTORS AND GARAGES

Ala., Birmingham—Automobiles.—Overland-Birmingham Co., capital \$50,000, inceptd.; H. M. Bailey, Prest.; R. A. Bailey, Jr., Secy.-Treas.

Ky., Catlettsburg—Garage.—G. W. McGlothlin will build garage.

Ky., Louisville—Garage.—Louis Seelbach will erect lately-noted building; small structure for machine; construction by owner; cost but \$500.

Ky., Louisville—Automobiles.—Paige Motor Sales Co., capital \$10,000, inceptd. by Edward A. Briel, J. J. Schwab and C. E. Schwab.

Ky., Middlesboro—Automobiles.—Middlesboro Electric & Auto Works, capital \$5000, inceptd. by W. H. Squires, C. B. Finley and J. L. Manning.

Md., Baltimore—Automobile Line.—Baltimore Transit Co., capital \$100,000, inceptd. by Wm. H. McKee of Philadelphia, Pa. (Prest.); Jas. Steele (533 Title Bldg.), G. Sellman Williams (both of Baltimore) and others; at first will operate 15 motor cars.

Va., City Point—Automobiles.—City Point Motor Co., capital \$30,000, inceptd.; J. M. Williams, Prest.; Lee Sharp, V-P. and Secy.; both of Disputanta, Va.

Va., Newport News—Garage.—Gayle's Garage, capital \$25,000, inceptd.; J. P. Gayle, Prest.; J. A. Massie, Secy.

Va., Richmond—Automobiles.—Kline Motor Car Co. is reported to increase capacity of automobile works.

W. Va., Wheeling—Garage.—W. W. Price of Elm Grove, W. Va., contemplates building garage.

RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

Ala., Mobile.—Southern Ry., W. H. Wells, Chief Engr. Constr., Washington, D. C., let contract Hancock, Harbin & Hancock of Mobile to erect 5 buildings for several mechanical departments, including repair shops, sand houses, etc.; this is third and final unit of \$250,000 freight terminals.

ROAD AND STREET WORK

Ark., Eureka Springs.—Carroll County Comms. organized road-improvement district to construct macadam road from Eureka Springs to Missouri line and steel bridge; propose to issue \$50,000 bonds.

Ark., Helena.—City paving contract lately noted let to Southern Bitulithic Co., Nashville, Tenn., includes about 18,000 sq. yds. bitulithic construction of portions of Perry, Pecan and Poplar Sts.; cost about \$42,000.

Ark., Lonoke.—Lonoke County Road Dist. No. 8 issued \$25,000 bonds to construct roads; let contract Brown & Frowley of Little Rock to build 4½ mi. macadam pike.

Ark., Marion.—Crittenden County Comms. will arrange to construct 10-mi. road, 60 ft. wide, from Harahan Bridge to Marion.

Ark., Russellville.—Comms. Pope County Road Improvement Dist. No. 1 will open bids about Aug. 1 to construct 20 m. of road from Russellville to Hector; issued \$150,000 bonds.

Ark., Stuttgart.—City will construct lately-noted concrete pavement by force account; 14,000 yds.; \$37,000 available; H. E. Rhodes, official in charge. (See Machinery Wanted—Road Machinery; Mixer.)

Fla., Clearwater.—Pinellas county votes Aug. 17 on \$715,000 bonds to construct roads, ratify contract with Edwards Construction Co. of Tampa at \$616,578.13 to construct 55.39 mi. of brick roads and provide for other roads, increasing that to 68 mi.; bridges to cost about \$45,000 additional; amount of bonds increased from \$500,000. (Lately noted.)

Fla., DeLand.—Volusia county, DeLand Dist., voted \$550,000 bonds to construct roads. Address County Comms. (Lately noted.)

Fla., Eustis.—City, I. N. Kennedy, Mayor, will call bond election within 30 days on \$40,000 for paving and \$20,000 for sanitary sewers; contemplated paving includes 35,000 sq. yds. modified sheet asphalt and 25,000 sq. yds. asphalt penetration; estimated cost of paving about \$90,000 (city's share \$40,000); date of opening bids not set; Engrs., Isham Randolph & Co., Chicago and Jacksonville; Geo. B. Hills, Engr.-Mgr., Jacksonville; H. C. Hannah, Chrmn. Street Committee.

Fla., Kissimmee.—Osceola county will receive bids Aug. 2 on about 3 mi. vitrified brick road, 9 ft. wide, with concrete curbing; J. L. Overstreet, Clerk Circuit Court; lately noted. (See Machinery Wanted—Road Construction.)

Fla., Miami.—Ray Front Improvement Assn. let contract E. E. Collins to construct boulevard 100 ft. wide. (See Land Developments.)

Fla., Palmetto.—City, Chas. Dennett, Mayor, will vote Aug. 10 on \$16,000 bonds for streets, sewers and water works.

Fla., Starke.—City votes Oct. 5 on \$16,000 bonds to pave streets. F. F. Hoover, Mayor. (Previously noted.)

Fla., Tallahassee.—City will make preliminary arrangements for street paving; will soon invite bids; Isham Randolph & Co., Engrs., Chicago and Jacksonville; Geo. B. Hills, engineer-manager Southern branch, Jacksonville.

Ga., Augusta.—City Council adopted recommendation for improvement of Campbell St. from Broad to Walker St. and on portions of Walker St.; pave Campbell St. from Broad to Walker St. and Walker St. from Jackson to Campbell with cressed wooden blocks; granite blocks removed from Campbell and Walker St. to be laid on Walker St. from McIntosh to Jackson St. and from Campbell to Kollock St.; estimated cost, \$30,000; Nisbet Wingfield, City Engr.

Ga., Griffin.—Spalding County Comms. accepted proposition of Birmingham Slag Co., Birmingham, Ala., through latter's agent, Dixie Engineering & Insulating Co., 711 Empire Bldg., Atlanta, to construct 600 to 700 lin. ft. sample slag roadway in front of Georgia Experimental Station; Birmingham Slag Co. to furnish slag and engineer; County Comms. to supply labor and road machinery; slag road probably of water-bound macadam type, with sand-clay foundation.

Ga., Leesburg.—Lee county voted \$27,000 bonds to improve roads and \$7500 bonds to build bridges. Address County Comms. (Lately noted.)

Ga., Savannah.—Chatham county, Oliver T. Bacon, Chrmn. Comms., contemplates voting within next 90 days on following bonds: For roads and bridges, \$375,000; schools, \$400,000; county buildings, \$125,000. (Lately noted.)

Ky., Williamsburg.—Whitley County Fiscal Court invites bids until July 24 to improve road from Williamsburg to Corbin; E. F. White, County Clerk. (See Machinery Wanted—Road Construction.)

Ky., Elizabethtown.—Hardin County Fiscal Court let contract J. Van Fletcher to build 4 m. of northern end of Dixie highway.

Ky., Georgetown.—Scott County Fiscal Court let contract J. S. Lancaster and J. W. Coyle to construct 24-mi. State-aid road.

Ky., Owensboro.—Davies County Court let contract Martin & Martin of Evansville, Ind., at \$24,500 to construct 4½ mi. of Hardinsville Rd.

Ky., Pineville.—Ball county will improve road from Washto to Calvin; bids until July 24; W. C. Bingham, County Clerk. (See Machinery Wanted—Road Construction.)

Ky., Winchester.—City will construct about 13,000 sq. yds. sheet asphalt paving; bids until Aug. 6; S. B. Tracy, City Clerk. (See Machinery Wanted—Paving.)

Md., Baltimore.—City will grade, curb and pave with sheet asphalt and granite block, all on concrete base, sections of Hillen, East and Gold Sts., Contract No. 121; 13,589 sq. yds. sheet asphalt, 3120 sq. yds. granite block and 1940 sq. yds. vitrified brick; bids until July 28; R. Keith Compton, Chrmn. and Consult. Engr., Paving Com., City Hall. (See Machinery Wanted—Paving.)

Md., Frederick.—Henry G. Shirley, Chief Engr. State Roads Com., Garrett, Bldg., will recommend award of contract to M. J. Grove Lime Co. of Lime Kiln, Md., at \$34,027.95 to construct 1.04 mi. road through town of Brunswick and on Brunswick-Petersville Rd. (Call for bids lately noted.)

Miss., Meridian.—Lauderdale county, Dist. 1, H. F. Breach, Chrmn. Good Roads Com., has received bids lately noted to be opened July 9 for construction of 5 m. streets and roads, but has not yet let contract; R. K. Gough, Meridian, lowest bidder; \$50,000 available; macadam construction, with bituminous wearing surface to be applied later; Engr., J. T. Pinkston, Box 73, Meridian.

Mo., Princeton.—City let contract to Hubler Bros. Construction Co., Kansas City, Mo., to construct 1 mi. cement paving; \$30,000 available; J. T. Snyder, Engr. (Lately noted.)

N. C., Dobson.—Surry county, Bryan township, votes Aug. 24 on \$5,000 bonds to construct roads; J. B. Sparger, Chrmn. County Comms.

N. C., Dobson.—Surry county, Eldora township, votes Aug. 10 on \$20,000 bonds to construct roads; J. B. Sparger, Chrmn. County Comms.

N. C., Dobson.—Surry county, Shoals township, votes Aug. 10 on \$20,000 bonds to construct roads; J. B. Sparger, Chrmn. County Comms.

N. C., Dobson.—Surry county, Westfield township, votes Aug. 10 on \$30,000 bonds to construct roads; J. B. Sparger, Chrmn. County Comms.

N. C., Durham.—Trinity College will complete macadamizing of circle drive and build granite wall around campus; estimated cost \$15,000.

N. C., Southern Pines.—City will construct 1000 to 1500 sq. yds. granolithic sidewalk; bids until Aug. 2; A. M. Clarke, Clerk. (See Machinery Wanted—Paving.)

Tenn., Chattanooga.—E. D. Bass, Commr. of Streets and Sewers, will recommend adoption of resolution authorizing \$80,000 bonds for street improvements; 2 separate issues; \$20,000 to pave Market St. from 9th to Main St. and remainder to pave following streets: McCallie Ave., Southern Ry. bridge to East End Ave., \$4811; Whiteside St., Main to 25th St., \$10,000; Long St., Main St. to city limits, \$16,000; W. Main St., Whiteside to Market St., \$5679; E. 9th St., Market to A St., E. 7th St., Cherry St. to Georgia Ave., \$1500; Oak St., Georgia to East End Ave.; will not let contracts until bonds are sold; bids for Market and E. 9th Sts. have been filed for later consideration.

Tenn., Knoxville.—City let contract Murray Construction Co. of Knoxville at \$43,251.57 to pave E. Vine, W. 5th and University Aves., Richards and Clark Sts.

Tenn., Knoxville.—Knox county will construct 88.11 mi. roads; building new and repairing old roads; \$500,000 available; Engrs., E. J. Gorman, 110 E. Scott Ave., and F. G. Phillips, 948 N. 4th Ave., both of Knoxville; Good Roads Com., Room 307, Holston National Bank Bldg., receives bids until July 28. (See Machinery Wanted—Road Construction.)

Tenn., Madisonville.—Monroe county defeated \$300,000 bonds to construct roads. (Noted in April.)

Tex., Paris.—City, Ed H. McCuiston, Mayor, let contract to Texas Bitulithic Co., Dallas, Tex., to construct 2 m. concrete base bituminous surface roads; \$50,000 available; W. T. Tyler, Engr. (Lately noted.)

Tenn., Waverly.—Humphries county, Jas. T. Anderson, Chrmn. Highway Comms., asks bids until July 24 to construct roads; previously noted as 200 to 250 mi., with bridges and culverts; \$250,000 available; G. B. Howard & Co., Engrs., Nashville, Tenn. (See Machinery Wanted—Road Construction.)

Tex., Clarksville.—Red River county, White Rock, Annona, English and Clarksville Dist., voted \$405,000 bonds to construct roads. Address County Comms.

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Tex., Cuero.—Dewitt county Comms. let contract Dick Fields of Victoria to grade, drain and gravel 9.1 mi. Hochelm-Yonkum Rd. in Road Dist. No. 1; \$50,000 bonds authorized; J. W. Benjamin, County Engr., 204 Esplanade St., Cuero. (Call for bids lately noted.)

Tex., El Paso.—El Paso county votes Aug. 17 on \$750,000 bonds to construct roads; plans to build trunk line 50 mi. long of cement or concrete. Address County Comms. (Election postponed from Aug. 3, lately noted.)

Tex., Fort Worth.—City let contract Roach-Manigan Paving Co. (main office, Memphis, Tenn.) to pave Richmond Ave. from Evans to New York Ave., and to General Construction Co. of Fort Worth to pave Grainger St. from Broadway to Peter Smith St.

Tex., Houston.—Harris County Comms. will extend Clinton paved road to Penn city, 7 mi.; estimated cost \$30,000.

Tex., Kaufman.—Kaufman County Justice Precinct No. 8 let contract to Callahan Construction Co., Omaha, Neb., to construct gravel and concrete roads and bridges; \$150,000 available; Chas. Chappell, Engr.; Jas. A. Cooley, County Judge. (Bids lately noted.)

Tex., McKinney.—Collin County Road Dist. (H. L. Davis, A. T. Raper, Eugene Baldwin, Sherwood Smith and J. H. Giles, officials) let contracts at \$575,000 for construction 60 mi. of road; Contrs., Englehart & Cain, Gary, Ind., at \$200,000, and W. T. Montgomery, San Antonio, Tex., at \$375,000; Engrs., John Meade and P. Y. Crenger. (Previously noted.)

Tex., McKinney.—City, H. A. Finch, Mayor, will construct street improvement, Dist. No. 2; 15,000 ft. combined curb and gutter; 23,000 sq. yds. asphaltic concrete pavement; 6000 sq. yds. brick pavement; estimated cost \$62,000; bids until July 29; Chas. Schultz, City Engr. (See Machinery Wanted—Paving.)

Tex., Polytechnic.—City let following contracts for street paving: A. D. Colvin, Ave. A from Annie to Nashville, 1575 ft.; A. L. Stockton, Ave. D from Annie to McKinzie St., 1275 ft., and Ave. J west from McKinzie Ave., 610 ft.

Tex., San Marcos.—City votes Aug. 17 on \$550 bonds to improve streets. Address The Mayor.

Tex., Seguin.—Guadalupe county, Precinct No. 4, voted \$12,500 bonds to improve roads. Address County Comms.

Tex., Sinton.—San Patricio county, Aransas Pass Dist., will vote on \$75,000 bonds for road construction. Address County Comms.

Va., Norfolk.—Board of Control let contract F. J. McGuire & Co. to construct combined curb and gutter on sections of Claremont St., Armistead Bridge Rd., West Ghent Blvd. and Bowdens Ferry Rd.; also to Perry W. Ruth Co. to place 11,000 ft. granite curbing on Irapax Ave., Thetford St., etc.

W. Va., Brond Oaks, P. O. at Clarksburg. Town will construct 15,000 sq. yds. paving; \$32,000 available; open bids Aug. 2; C. A. Osborn, Clarksburg, W. Va., Engr.; bonds lately noted. (See Machinery Wanted—Paving.)

W. Va., Hamlin.—Lincoln county, Duval Dist., will vote on bonds to construct roads. Address County Comms.

W. Va., Hinton.—Summers county, Greenbrier and Talcott Dist., annulled call for lately-noted bond election for road and bridge construction; will set another election date; J. M. Carden, County Clerk.

W. Va., Huntington.—City will grade, curb and pave with No. 1 vitrified brick portions of Walnut and 7th Sts. 12th and 10th Aves. and 2 alleys; bids until July 28; O. H. Wells, Commr. of Streets, Sewers, etc. (See Machinery Wanted—Paving.)

W. Va., Logan.—Logan county, Logan Dist., votes Sept. 7 on \$200,000 bonds to construct roads. Address County Comms.

W. Va., Moundsville.—City will construct cement curb on north side of 5th St. from Washington to Grant Ave. and pave 5th St. from Jefferson to Grant Ave. with vitrified brick, cement tarvia or Warrenton paving; bids until July 26; O. B. Bonar, Clerk. (See Machinery Wanted—Paving.)

W. Va., Parkersburg.—City let contract Parson Construction Co. of Brownsville, Pa., to pave sections of Avery and 18th Sts.; Frank Good, Aud. (Call for bids lately noted.)

SEWER CONSTRUCTION

D. C., Washington.—Dist. Comms. let contracts for Northampton St. sewer; outlet section awarded to W. F. Cush and service sewers to Geo. Hyman, both of Washington;

estimated cost \$6000; A. E. Phillips, Supt. of Sewers. (Previously noted.)

Fla., Euclia.—City, I. N. Kennedy, Mayor, will call bond election within 30 days on \$20,000 for sewer construction; 3 mi. sanitary sewer; Imhoff tank; pneumatic sewage injector; Engrs., Isham Randolph & Co., Chicago and Jacksonville; Geo. B. Hills, Engr.-Mgr., Jacksonville; H. C. Hannah, Chrmn. Street Committee. (See Road and Street Work.)

Fla., Largo.—Pinellas County Comms. will install sanitary system and small septic tank for convict camp; bids Aug. 3; Clements McMullen, County Highway Engr., Largo. (See Water-works. See Machinery Wanted—Water-works, Septic Tank, etc.)

Fla., Palmetto.—City, Chas. Dennett, Mayor, will vote Aug. 10 on \$16,000 bonds for sewers, streets and water-works.

Fla., Starke.—City votes Oct. 5 on \$26,000 bonds to construct sewer system. C. F. Hoover, Mayor. (Previously noted.)

Ky., Harlan.—City voted \$7500 bonds to construct sewer system. Address The Mayor. (Lately noted.)

Ky., Madisonville.—City let contract Quinn & Ellis of Nashville, Tenn., at \$6068 to construct 8665 ft. 8-in. vitrified pipe sewer. (Call for bids lately noted.)

Ky., Mayesville.—City let contract Farrow & Co. at \$2581 to construct 18-in. sewer.

Md., Baltimore.—City will construct lateral sewers and house connections in Dist. No. 45, Contract No. 158; 43,000 lin. ft. 8 to 12-in. sewers and 37,000 lin. ft. house connections; bids until July 28; Chas. England, Chrmn. Sewerage Com. (See Machinery Wanted—Sewer Construction.)

Miss., Tutwiler.—City contemplates issuing \$15,000 bonds for sewer system and water-works. Address The Mayor.

Tex., Beeville.—City voted \$15,000 bonds to extend sewer system; 25,670 lin. ft.; Bartlett & Ranney, Consult. Engrs., San Antonio. (Lately noted.)

Tex., Dallas.—City Comms. invite bids on construction of sewage-disposal plant proper, sewage-pumping station and force main between the two; estimated cost, \$350,000. (Previously noted.)

Tex., Santa Anna.—City voted \$6000 bonds to construct sewer system. Address The Mayor.

Va., Richmond.—Chas. E. Bolling, City Engr., will submit plan to Administrative Board and report upon other details, including cost of constructing sewer system for annexed territory on North Side, including Barton Heights, Ginter Park, Highland Park and North Richmond.

W. Va., Huntington.—City is having plans prepared by John Sanborn, Asst. Engr., to construct 1½ mi. of sewers in First and Second Wards to drain about 800 lots between 6th Ave. and Baltimore & Ohio R. R.; estimated cost \$8000.

TELEPHONE SYSTEMS

Fla., Starke.—City Council granted 20-year franchise to operate telephone exchange.

N. C., Bostic.—Cherry Mountain Rural Telephone Co. (lately noted inceptd.), D. D. Fortune, Prest., continues operation of established rural telephone line; 30 phones.

TEXTILE MILLS

Ga., Athens.—Hosiery.—Holland Mfg. Co. organized; W. C. Wilson, Prest.; S. C. Candler, Secy.-Treas.; leased buildings; has ordered 100 knitting machines, etc., costing \$20,000; 40 H. P. electric and 20 H. P. steam power; belt drive; daily capacity 500 doz. prs. hosiery. (Lately noted inceptd. with \$100,000 capital stock, etc.)

Ga., Atlanta.—Cotton Gauze, etc.—Atlanta Fiber Co., capitalization \$24,000, inceptd. by H. C. Geiger, W. P. Jones and C. W. Johnson; to manufacture absorbent cotton gauze, wadding, etc.

Ga., Augusta.—Press Cloth.—Wm. A. Lee (lately of Brooklyn, N. Y.) has 320x36-ft. brick building; will install mill machinery costing \$8000, 30 H. P. electric motor, belt drive from main shaft, etc., for manufacturing oil press cloth. (Recently mentioned.)

Ga., Chickamauga.—Cotton Bags, etc.—Crystal Springs Bleachery Co. will build 2-story 102x17-ft. mill addition for extra storage space. (Lately noted.)

Ga., Dalton.—Cotton Cloth.—Crown Cotton Mills let contract Galloway Building Co., Greenville, S. C., to build lately-noted additions; to include 2-story standard brick mill construction 160x125-ft. spinning mill addition,

tion, 250x100-ft. weave shed, warehouses, cottages, etc.; will add 15,000 spindles with accompanying looms, etc.

N. C., Kings Mountain.—Cotton Yarn.—C. E. Neisler will build cotton mill for spinning; install 2000 spindles; let contract Kiser Lumber Co. to erect 2-story building.

N. C., Tryon.—Cotton Cloth.—Smitherman Cotton Mills will install 180 automatic looms to replace 180 plain looms; let contract to Draper Co., Hopedale, Mass.

WATER-POWER DEVELOPMENTS

Md., Cumberland.—Edw. L. Williams, 10 N. Liberty St., proposes development of waterpower with view to transmitting electricity for light and power; has not as yet arranged with engineers. (See Machinery Wanted—Engineers.)

N. C., Tuxedo.—Blue Ridge Power Co., authorized capital \$700,000, inceptd. by J. O. Bell of Tuxedo, S. B. Tanner of Charlotte, N. C.; W. S. Montgomery, John A. Law and Geo. E. Lashaw of Spartanburg, S. C.

Tex., San Antonio.—City is reported as considering plans to utilize water of San Antonio River as it passes through Brackenridge Park to generate electricity to light park.

Tex., Seguin.—Seguin Electric Light & Power Co., Owen A. Gafford, Mgr., asks bids until Aug. 10 for power-plant equipment noted in May; mechanical and electrical equipment, including water wheels, transmission machinery, generator and switchboards. (See Machinery Wanted—Electrical Equipment, etc.; also Water Wheels.)

WATER-WORKS

Ark., Leslie.—City will issue bonds to construct water-works; W. F. Cook, Jr., Engr., Little Rock; A. G. Killebrew and others Comms.

Ark., Star City.—City granted 50-yr. franchise to Star City Water & Sewerage Co. (D. A. McIntosh and J. C. Hollums of Collins, Miss.); secure water from springs.

Fla., Cooldige.—City votes Aug. 16 on \$4500 bonds to construct water-works; G. T. Knight, Mayor.

Fla., Largo.—Pinellas County Comms. will install water-works plant and sewerage system for convict camp; bids Aug. 3; Clements McMullen, County Highway Engr., Largo. (See Machinery Wanted—Water-works, Septic Tank, etc.)

Fla., Palmetto.—City, Chas. Dennett, Mayor, will vote Aug. 10 on \$16,000 bonds for water-works, sewers and streets.

Fla., Pensacola.—City pumping station building will be 80x90 ft. structure, costing about \$15,000; concrete, brick and steel; P. M. Blount Constr. Co. of Pensacola (lately noted as Contr.) asks bids on materials. (See Machinery Wanted—Building Materials.)

Ga., Boston.—City will extend water-works; expend about \$25,000 on complete sewerage system (lately noted) and the water-works extension; Engr., W. Hopson Goodloe, Macon, Ga.

Ga., Dallas.—City will have plans prepared by Henry B. Baylor of Atlanta for water-works; to include dam.

Ga., Savannah.—City contemplates installing pump at Gwinnett St. station, recommended by Dr. K. W. Stephenson of United States Geological Survey; estimated cost, \$30,000, including building; Jos. P. Figg, Supt. of Water-works.

Md., New Windsor.—State Dept. of Health approved plans for extension of water-works.

Miss., Tutwiler.—City contemplates issuing \$15,000 bonds for water-works and sewer system. Address The Mayor.

Mo., Washington.—City, P. F. Peitz, Mayor, will vote on \$60,000 bonds to purchase water-works now under private ownership; plant, if purchased, to be improved.

Okla., Bixby.—City Council adopted resolution ordering election to vote on \$26,000 bonds for water-works. Address The Mayor.

Okla., Bromide.—City contemplates constructing water-works and electric-light plant. Address The Mayor.

S. C., Union.—City votes Aug. 10 on \$25,000 bonds to extend water-works; L. C. Wharton, Mayor.

Tenn., Bellbuckle.—City defeated \$25,000 bonds to construct water-works. (Lately noted.)

Tex., Beaumont.—City, J. G. Sutton, Secy., rejected bids (previously noted for July 14) for construction, including cast-iron 30-in. pipe across Neches River; will ask new bids,

to be opened Aug. 17; Burns & McDonnell, Engrs., Scarritt Bldg., Kansas City, Mo.

Va., Castlewood.—Castlewood Water Co., capital \$5000, inceptd.; J. W. Huff, Prest.; R. S. Gose, Secy.-Treas.

Va., Harrisonburg.—Town Council appropriated \$6000 to build filtration plant.

Va., Radford.—J. C. King, care of Southwestern State Hospital, Marion, Va., will dig deep well for water supply in connection with remodeling building for hospital. (See Machinery Wanted—Well Drilling.)

WOODWORKING PLANTS

Ark., Mountain Home.—Staves.—J. S. Kluesle of Higden, Ark., is reported to build stave mill.

Ark., Peach Orchard.—Staves.—Walbert Stave Co., capital \$15,000, inceptd. by T. J. Walbert, Wm. Johnson, W. W. Walbert and others.

Ga., Atlanta.—Furniture.—Dixie Table & Mfg. Co., capital \$20,000, inceptd. by P. L. Young, M. B. Young and R. G. Young.

Ky., Glasgow.—Staves.—Chas. Shannon is reported as interested in rebuilding stave mill of H. A. Moss; lately noted burned.

Mo., Cape Girardeau.—Handles.—Coffman Handle Factory (K. A. and T. T. Brumback), Coffman, Mo., will establish handle, novelty furniture and sweeping compound factory in Cape Girardeau.

N. C., Azalea.—Azalea Woodworking Co. will rebuild plant lately noted burned at estimated loss of \$40,000 to \$50,000.

FIRE DAMAGE

Ala., Dothan.—Central Compress; plant was owned by Central of Georgia Ry., C. G. Lawrence, Ch. Engr., Savannah, Ga., and leased to Atlantic Compress Co.; loss on building, machinery and cotton \$200,000.

Ala., Florence.—H. D. Smith's store building on W. Tennessee St.

Ala., Winfield.—H. F. Roberts' warehouse.

Ark., Helena.—Tappan Hardware Co.'s garage, 314 Perry St.; estimated loss \$25,000; building was owned by Jos. L. Solomon and Phil Solomon.

Fla., Jacksonville.—Prof. M. T. Moore's residence at 21st St. and Talleyrand Ave.; loss about \$3500.

Ga., Oakpark.—W. A. Hutcheson's residence.

Ga., Calro.—G. F. Hurst's residence; loss \$4000.

Ga., Camilla.—Union Supply Co.'s warehouse.

Ga., Thunderbolt.—Edwin M. Tilton's residence; loss \$4300.

Ky., Henderson.—Peter-Geibel Co.'s store; loss \$35,000.

Ky., Jeffersonton.—United Safety Powder Co.'s plant.

Ky., Mt. Sterling.—H. C. Ledford's residence; loss \$4000.

Ky., Murray.—L. M. Overbey's lumber and stave mill.

La., Abbeville.—Reliable Dry Goods Co.'s store; loss \$10,000.

La., New Orleans.—LeMonnier Co.'s building at 727 Poydras St., owned by J. Schmidt; loss \$20,000.

La., New Orleans.—L. C. Cuccia's double cottage at 1909-11 N. Derbigny St.; loss \$25,000.

Md., Westminster.—J. Edward Crowl's bottling works and ice-cream plant; loss \$4000.

Miss., Gulfport.—W. M. Wilkinson's residence; loss \$4500.

Miss., Newton.—Model Hotel, B. Tinsley, Propr. and owner.

Mo., Stockton.—R. R. Hayter's building; Knights of Pythias' building; loss \$40,000.

Mo., St. Joseph.—Morris & Co.'s ice plant and box factory, both located in one building, damaged; estimated loss \$10,000.

S. C., Chester.—Ernest Allen's residence in Baton Rouge section.

N. C., Goldsboro.—Capt. J. B. Edgerton's dwelling, occupied by J. W. Grady.

S. C., Anderson.—Anderson Mattress & Spring Bed Co.'s plant; loss \$3000 to \$4000.

Tenn., Columbia.—Wade H. Westmoreland's residence, occupied by E. D. Martin; loss about \$4000.

Tenn., Henderson.—W. C. Thompson's dwelling; loss \$3500; Mrs. A. J. Maness' residence; loss \$2500.

Tenn., London.—R. A. Kimbel's store; Henson Frazier's office building; Chas. L. Pearson's art gallery; Geo. W. Pearson's office building; J. J. Groves' building, occupied by A. F. Turnbow; A. T. Craig's store building.

Tenn., Nashville.—Dismukes-Niles Hat Co.'s building, loss \$50,000; Hollins Sons & Co.'s building and Washington Mfg. Co.'s building; loss \$10,000.

Tenn., Nashville.—Building at 221 Fourth Ave. South, occupied by S. Albert & Son and owned by S. S. Crockett; loss \$4000.

Tenn., Nashville.—Southern Mill Supply Co.'s storehouse at 173 3d Ave.; loss on building, owned by Gordon Stokes, Sr., \$20,000.

Tenn., Paris.—E. L. Eldridge's residence near the Mineral Wells.

Tex., Boyd.—Boyd Index; loss \$1500.

Tex., Brownwood.—Brooke Smith's building, occupied by Waples-Platter Grocery Co.; loss \$5000.

Tex., Del Rio.—Del Rio Steam Laundry; loss \$10,000.

Tex., Maypearl.—Bee Creek Gin Co.'s plant; loss \$5000.

Tex., Moran.—J. F. S. Wilson's feed store; Earl Goodman's blacksmith shop; loss about \$4000.

Tex., Temple.—Building on Central Ave. and 13th St., occupied by city for stables; loss several thousand dollars. Address The Mayor.

Va., Myrtle.—Mrs. Polly L. Atkins' store, occupied by J. Bunyan Archer.

Va., Ocean View.—A. L. Childress' residence; loss about \$7500.

Va., Richmond.—Mrs. E. E. Carpenter's residence; loss \$4000.

W. Va., Davy.—W. P. Morgan & Bro.'s store, loss \$6000; A. T. Lusk's building, loss \$4000.

W. Va., Orlando.—Catholic Church. Address The Pastor.

cost about \$35,000; bids due July 27; bidders are Thos. L. Jones & Son, 410 W. Saratoga St.; B. F. Bennett Building Co., 123 S. Howard St.; Cowan Building Co., 106 W. Madison St.; E. G. Turner, 15 E. Fayette St.; Edw. Watters & Co., 509 N. Charles St.; Thos. B. Standfield & Son, 212 Clay St.; all of Baltimore.

Md., Hurlock.—Baptist church will erect building; concrete block construction; main building 50x60 ft.; 4 gables and 40-ft. tower; auditorium separated from main building by rolling partition; Arthur S. German, Archt., Hurlock; foundation constructed by C. Homer Turner, Federalsburg, Md.

Mo., Kansas City.—Westport Presbyterian Church has plans by Shepard, Farran & Wiser, Kansas City, for Sunday-school and educational building at Westport Ave., Wyandotte and 40th Sts.; stone; 22 classrooms, grouped about central auditorium; structure 48x70 ft.; Rev. Geo. P. Baily, pastor.

Mo., Laredo.—Baptist Church has plans by J. E. Green, 508 American Trust Bldg., Birmingham, Ala., for building; ordinary construction; metal-shingle roof; art glass; rolling partitions; cost about \$7000.

Mo., Maplewood, Sta. St. Louis.—M. E. Church, Rev. Jas. R. Postlethwait, pastor, 7477 Elm Ave., will erect lately-noted building; 50x105 ft.; fireproof; slate roof on steel trusses; wood floors; cost \$15,000; steam heat, \$500; electric lighting; Wm. Koester, Archt., 7363 Elm Ave. Address Pastor. (See Machinery Wanted—Building Material, Electric Wiring, Heating Plant, Seating, etc.)

Mo., University, Sta. St. Louis.—Delmar Ave. Baptist Church, Rev. S. E. Ewing, pastor, will erect building in University City.

N. C., Charlotte.—Hawthorn Lane Methodist Church has plans by Louis H. Asbury, Charlotte, for building; cost \$35,000 to \$40,000.

N. C., Kernersville.—First Baptist Church has plans by G. Will Armfield, Greensboro, N. C., for building on Main St.; 40x80 ft.; ordinary construction; slate roof; pine floor; \$450 hot-air heat; electric light; cement walks; cost \$10,000; day labor; construction begun. Address R. L. Carlton, Secy., Kernersville. (Lately noted.)

N. C., Littleton.—Christian Church, Rev. Raleigh L. Topping, pastor, plans to erect building; H. J. Cordle, Sunday-school Supt. N. C., Winston-Salem.—Southside M. E. Church, Rev. L. F. Brothers, pastor, has plans for parsonage on lot adjoining church; will probably let contract in few days. (Lately noted.)

Okla., Pawhuska.—First Methodist Church, Rev. J. T. Riley, pastor, rejected bids to erect building. (Noted in Mch. to have plans by J. O. Parr, Oklahoma City, Okla., for building; cost about \$12,000.)

S. C., Greenville.—Palmer Presbyterian Church will erect building, probably in October; seating capacity main auditorium 400; steam heat; electric light; cost \$12,000 to \$15,000. Address Rev. Dr. G. O. Griffin, Pastor, 117 Westfield St., Greenville. (Lately noted.)

S. C., Townville.—Townville Baptist Church will erect building. Address The Pastor.

Va., Richmond.—Leigh Street Baptist Church will erect Sunday-school building; cost about \$25,000.

Va., Richmond.—Highland Park Methodist Church, Rev. C. O. Tuttle, pastor, receives bids through McMichael & Cain, Archts., Lyric Bldg., Richmond, for Sunday-school building; 3 stories; 60x90 ft.; cost \$16,000 to \$20,000.

Va., Staunton.—First Presbyterian Church is having plans prepared by McMichael & Cain, 303 Lyric Bldg., Richmond, for church and Sunday-school building; 3 stories; 57x112 ft.; ordinary construction; slate and Barrett specification roof; wood and rubber tile floor; steam heat; electric light; cost about \$40,000; plans ready about July 23. Address Archts. (Noted in June.)

W. Va., Huntington.—Huntington Institutional Baptist Church is having plans prepared by McMichael & Cain, 303 Lyric Bldg., Richmond, Va., for building; 3 stories; 90x160 ft.; stone; ordinary construction; tile or slate roof; wood floor; steam heat; electric light; cost \$100,000; plans ready July 25; is having sketches prepared by same Archts. for woman's dormitory; stone; swimming pool; bowling alleys; gymnasium; shower baths; cost about \$100,000; work on latter building to start in 1916. For information on both address Rev. C. E. Wren, pastor, Huntington.

CITY AND COUNTY

Ga., Atlanta.—Cyclorama.—General Council Park Com. adopted ordinance providing for erection of cyclorama building at Grant Park for war pictures; ultimate plans call for erection of fireproof building.

Ky., Ashland.—Jail, etc.—City, Wm. Salisbury, Mayor, plans election on \$200,000 bonds, to include \$100,000 to pay outstanding debt and \$100,000 to erect city building, jail, market-house, crematory for garbage and truck for fire department. (Lately noted.)

N. C., Jacksonville.—Jail.—J. B. Grant, Chrmn., receives bids until Aug. 2 to erect jail for Onslow county; concrete; plans and specifications on file at courthouse and may be had at office of Frank B. Simpson, Archt., Home Bldg., Raleigh, N. C., after July 20.

Okla., Miami.—Jail and Courthouse.—Ottawa County Court will consider election on \$75,000 bond issue to erect courthouse and jail.

Tex., El Paso.—Jail.—City is erecting new section to city jail and addition to police court; about 30x35 ft.; brick. Address The Mayor. (Previously noted.)

Va., Altavista.—Town Hall and Jail.—Town is reported to erect building for town hall and jail at 7th St. and Bedford Ave. Address Town Clerk.

Va., Staunton.—Jail, etc.—Harry Burnett, Clerk of Augusta County Court, receives bids until July 26 to erect jail and jailer's residence and police courtroom and offices for city of Staunton; drawings and specifications at office of Mr. Burnett as above and S. D. Holsinger, City Mgr., both of Staunton.

COURTHOUSES

Ala., Enterprise.—Coffee County Commrs., Elba, Ala., will consider election on \$20,000 bonds to erect courthouse; S. N. Rome, Clerk of Board, Elba.

Okla., Miami.—Ottawa County Court will consider election on \$75,000 bond issue to erect courthouse and jail. (See City and County.)

W. Va., Madison.—Elmer Nelson, Clerk of Boone County Court, receives bids until Aug. 10 to erect courthouse; bids considered either for building as a whole or for completion of outside work and inside work separately; plans and specifications at office of H. Bus Warner, Archt., Charleston, W. Va. (Noted in Apr.)

DWELLINGS

Ala., Birmingham.—Mrs. Saml. Wilder has plans by Sallie & Mewhinney, Woodward Bldg., Birmingham, for 2-story brick-veneer residence.

Ala., Birmingham.—Ed D. Robinson opens bids about Aug. 2 to erect dwelling on Norwood Blvd.; 1 story; frame; bungalow type; composition shingle roof; warm-air heat; Bem Price, Archt., Birmingham.

Ala., Birmingham.—L. M. Porter, 928 S. 20th St., has plans by Bem Price, Birmingham, for residence on Wilner Heights; 2 stories and basement; brick veneer; cement tile roof; warm-air heat; bids opened about July 24.

Ark., Argenta.—E. B. Mosley will erect 2 dwellings.

Ark., Argenta.—R. Mobley will erect 2 residences.

Ark., Argenta.—R. D. Lewis will erect residence.

D. C., Washington.—Mrs. Kate V. Daly rejected bids to erect dwelling at 16th and Meridian Sts.; will probably approve revised sketches and invite new bids; plans by A. B. Mullett & Co., Union Trust Bldg., Washington, call for 3-story structure to cost about \$10,000. (Contract lately noted let.)

D. C., Washington.—Harry A. Kite, 1338 G St. N. W., has plans by A. E. Landvoigt, 713 14th St. N. W., Washington, for 8 dwellings at 1307-21 D St. N. E.; 2 stories; brick; cost \$20,000; construction by owner.

Fla., Captiva.—D. Sullivan & Son, Chicago, will erect several bungalows.

Fla., Coconut Grove.—Dr. W. A. Long will erect residence.

Fla., Coconut Grove.—E. A. Theed will erect residence.

Fla., Jacksonville.—W. A. McDuff is having plans prepared by W. B. Camp, Jacksonville, for \$25,000 residence.

Fla., Lakeland.—Dr. G. C. Barton is reported to erect residence.

Fla., Lakeland.—Gen. J. A. Holley is reported to erect residence.

Fla., Punta Gorda.—C. A. Waltmire will erect 9-room residence.

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

D. C., Washington.—John L. Warren, Southern Bldg., has plans by Hunter & Bell, Southern Bldg., Washington, for apartment-house at 295 11th St. N. W.; 2 stories; brick; cost \$18,000; construction by owner.

Fla., Tampa.—D. S. Jenkins will expend \$3500 to convert school at Jefferson and Henderson Sts. into flat.

Fla., Tampa.—S. L. Lowry will erect 2-story apartment-house at Verne St. and Plant Ave.

Fla., Ybor City, Ind. Sta. Tampa.—G. Piazza is erecting 2-story flat at 8th Ave. and 17th St.

Ga., Dalton.—Crown Cotton Mills will erect tenement-houses; Park A. Dallis Co., Archt., Candler Bldg., Atlanta.

Ga., Savannah.—Chas. F. Fulton acquired 8 dwellings and will remodel; several to be converted into apartments.

Md., Baltimore.—Benj. and Lee S. Meyer are having plans prepared by Smith & May, 1133 Calvert Bldg., Baltimore, for apartment-house at Lakeview Drive and Brookfield Ave.; 68x112 ft.; fireproof; slag roof; hardwood floor; steam heat; electric light; electric elevator; plans ready about Aug. 4. (Noted in May.)

Mo., Kansas City.—Corbin Realty Co. will erect 2 apartment buildings on 29th St. and Garfield Ave. and 10th St.

Mo., Kansas City.—H. W. Leland will erect 2-story frame duplex apartment at 2601 Park Ave.; cost \$5000.

Mo., St. Louis.—H. O. Barnett will erect 2-story tenement-house at 460-62 DeTonty St.; cost \$5600; construction by owner.

Mo., St. Louis.—C. E. Lund will erect 15 single flats and 1 store-flat building on Taylor Ave. between Lexington and Natural Bridge Aves.; cost about \$112,000.

Tenn., Memphis.—J. Walker Hays has plans by Harker & Cairns, Memphis, for apartment-house on Vinton Ave.; 2 stories and basement; brick and stucco; tile roof.

Tex., El Paso.—D. Baker Smith will erect apartment-house in Alexander Addition; 36x40 ft.; cost \$4600.

Tex., El Paso.—E. Carlson will erect brick apartment-house in Hart's Addition; 38½x120x38 ft.; cost \$36,000.

Tex., El Paso.—J. W. Bedford will erect brick tenement-house in Magoffin Addition; 30x120x14 ft.; cost \$3000.

Va., Norfolk.—Mrs. Cora I. Breeding will erect apartment-house; 2 stories; cost \$3000.

W. Va., Princeton.—G. W. Braun is having plans prepared by A. F. Wyson, Princeton, for apartment and store building on Mercer St.; 2 stories and basement; 30x108 ft.; brick; built-up roof; tile and wood floor; hot-water heat; electric light; cost \$12,000; bids opened Aug. 2.

ASSOCIATION AND FRATERNAL

N. C., Durham.—State Grand Lodge, Royal Knights of King David, will erect \$20,000 office building; W. G. Pearson, John Merritt, John H. Avery and J. L. Pearson, Com.

Va., Portsmouth.—Magnolia Camp No. 4, Woodmen of the World, will soon award contract to erect building; 4 stories; brick and stone; auditorium to seat 1200; cost \$25,000.

BANK AND OFFICE

Ala., La Pine.—First National Bank of La Pine organized with W. L. Grissette, Prest.; will appoint committee Aug. 1 to erect building.

Ga., Macon.—Fourth National Bank has plans by Alexander Blair, Georgia Casualty Bldg., Macon, for improvements to building.

S. C., Charleston.—Charleston Building & Investment Co. has plans by J. D. Newcomer, Charleston, for bank building for title guarantee and deposit department; 2 stories; 26x84 ft.; brick and stone; tin roof; hot-water heat; cost about \$20,000; bids opened Aug. 2. (Lately noted.)

CHURCHES

Ark., Rison.—First Baptist Church opened bids July 15 to erect building; mill construction; shingle roof; electric light; cost about \$2500. Address J. W. Elrod, Rison. (Lately noted.)

D. C., Washington.—Petworth M. E. Church rejected bids to erect building according to plans by M. F. Moore, 720 Colorado Bldg., Washington; work will be done in parts. (Noted in June.)

D. C., Washington.—Episcopal Cathedral has bids for erection of apse to cost about \$500,000; construction probably this summer; Henry Vaughn, Archt., Boston, Mass.; Arthur Henton, Asso. Archt., Wilkins Bldg., Washington. (Previously noted.)

Fla., Tampa.—First Baptist Church plans to erect building. Address The Pastor.

Ga., Atlanta.—Church of the Redeemer will expend \$15,000 to repair church and parsonage; E. C. Seiz, Archt., Atlanta; reported to expend about \$80,000 later for improvements.

Ga., Atlanta.—English Lutheran Church will improve building; enlarge present structure and convert into Sunday-school chapel to accommodate 700. Address The Pastor.

Ga., Columbus.—First Baptist Church (colored) employed J. H. Carter as superintendent to erect building at 9th St. and 5th Ave.; 95x85 ft.; ordinary construction; metal roof; steam heat; electric light; cost \$15,000 to \$20,000; F. Roy Duncan, Archt., Columbus; contract for material lately noted let to T. U. Butts, Columbus. Address J. H. Smith, pastor, 911 5th Ave., Columbus. (See Machinery Wanted—Heating, Steam; Lighting, Electric; Furniture, Church; Organ, Pipe.)

Ga., Rome.—Methodist congregation plans to erect \$5000 building. Massachusetts Mills is interested.

Ga., Savannah.—St. John's Church has plans by H. Wallin, Savannah, for alterations to portion of building, including enlarging rear part of structure, chancel and sanctuary; Rev. W. T. Dakin, rector.

Ky., Scottsville.—First M. E. Church opens bids Aug. 10 to erect brick and tile building; separate contract for heating; R. E. Turbeville, Archt., Nashville; W. N. Cook, Chrmn. Building Com. (Lately noted.)

Md., Baltimore.—Faith Presbyterian Church has plans by Clyde N. Friz, 1523 Munsey Bldg., Baltimore, for Sunday-school building at Broadway and Gay Sts.; irregular shape, about 79x71 ft.; 3 stories; stone; semi-fireproof; duck roof; hardwood floor; steam or hot-water heat and electric light reserved;

Ga., Atlanta.—F. S. R. Realty Co. will erect 2-family residence; brick veneer; tile roof; oak and maple floors; hot-water heat; birch doors; tiled porches and bathrooms; cost \$12,000; day labor; Horace B. Hammond, Archt., 1429 Candler Bldg., Atlanta.

Ga., Atlanta.—Mrs. Asa G. Candler will erect residence in Druid Hills on Ponce de Leon Ave.; 1 story; 12 rooms; cost \$25,000; also servant-house and garage to cost \$3,000; day labor; Geo. E. Murphy, Archt., Atlanta. (Lately noted.)

Ga., Atlanta.—B. E. Lawrence will erect 4 frame dwellings; cost \$8,000.

Ga., Atlanta.—Mrs. A. G. Langel will erect 1-story frame bungalow; 7 rooms; stone foundation; electric lights; hardwood floors; tiled bath floors; cost \$3,000; Lella Ross Wilburn, Archt., Atlanta.

Ga., Atlanta.—E. G. Harris, Macon, Ga., will erect residence at College Park; brick; tile roof; steam heat; domestic water supply; cost \$20,000; P. E. Dennis, Archt., American National Bank Bldg., Macon, Ga.

Ga., Atlanta.—Geo. Wight will erect bungalow; 1 story; frame; 8 rooms; stone foundation; furnace heat; Nuttle roofing; electric lights; hardwood floors; cost \$3,750; Lella Ross Wilburn, Archt., 305 Peters Bldg., Atlanta.

Ga., Atlanta.—J. T. Wike will erect residence; 1½ stories; frame; 9 rooms; stone foundation; reinforced concrete veranda floor; metal-shingle roof; furnace or steam heat; electric lights; tiled bath floors; hardwood floors; cost about \$5,000; Lella Ross Wilburn, Archt., 305 Peters Bldg., Atlanta.

Ga., Augusta.—A. Bernard Parntaut will erect bungalow.

Ga., Augusta.—E. W. Hancock, Contr., has permit to erect 6 residences; cost \$20,000.

Ga., Augusta.—Guy Bowen will erect 2-story residence.

Ga., Augusta.—J. H. Zimmerman will erect \$300 residence on Winter St.

Ga., Augusta.—G. F. Huilbert will erect \$300 residence.

Ga., Jonesboro.—Mrs. Lucy Mann will erect residence; 2 stories; frame; colonial style; brick foundation; shingle and tin roof; electric wiring; cost about \$3,500; Morris & Morris, Archts., 525 Atlanta National Bank Bldg., Atlanta.

Ga., Jackson.—W. L. Etheridge will erect residence; frame; 1½ stories; granite laid in random-coursed-ashlar for foundations, columns and chimneys; hardwood floors; ceramic tile; terrazzo porch; electric lights; cost \$3,500; Happ & Shelverton, Archts., Fourth National Bank Bldg., Macon, Ga.

Ga., Lyons.—L. J. Cowart is erecting bungalow.

Ga., Savannah.—W. E. Eldridge has plans by H. Wallin, Savannah, for residence at 8th St. and Mall; cost about \$5,000; bids being received.

Ga., Savannah.—Chas. F. Fulton acquired 5 dwellings and will remodel. (See Apartment-houses.)

Ga., Thunderbolt.—Edwin M. Tilton will rebuild residence reported damaged by fire at loss of \$4,300.

Ky., Louisville.—Chas. Chrestle will erect 2 brick-veneer and 2 frame dwellings at 2828-30 Eastern Parkway and 3014-16 Bismarck St.; cost \$7,800.

Ky., Louisville.—J. F. Vogt will erect brick veneer dwelling on Tyler Parkway, near Baxter Ave.; cost \$5,500.

Ky., Louisville.—United States Building & Realty Co., 509 Inter-Southern Bldg., will erect 2 dwellings on Maplewood Pl.; 5 rooms; bungalow type; ordinary construction; asphalt shingle roof; hardwood floor; gas heat; electric light; cost \$5,000; plans and construction by owner. (Lately noted.)

Ky., Middlesboro.—A. P. Leibig is erecting 2 dwellings.

La., Abita Springs.—Abita Hotel Co. organized by L. A. Block, Prest. of Mutual Liquor Co., New Orleans, and others; will erect 20 cottages, etc. (See Hotels.)

La., Harahan City (not a P. O.).—General Realty Co., New Orleans, La., is reported to erect \$3,000 residence.

Md., Anne Arundel County.—Dr. M. H. Carter opens bids July 20 to erect dwelling at Joyce Station on Severn River; 32x51 ft.; brick or hollow tile; stucco exterior; quartered oak interior decoration; hardwood floor; tile roof; vapor heat; electric light; cost about \$17,000; Emory & Nuscar, Archts., Professional Bldg., Baltimore; bidders are Henry Smith & Sons, German and Light Sts.; Willard E. Harn Co., 213 Calvert St.; G. Walter Tovel, Eutaw and Me-

Culloh Sts.; R. H. Frazier & Son, 224 W. Mulberry St.; Consolidated Engineering Co., 243 Calvert Bldg.; Cowan Building Co., 106 W. Madison St.; all of Baltimore. (Lately noted.)

Md., Baltimore.—John Wedderburn has plans by Owens & Sisco, Continental Bldg., Baltimore, for remodeling dwelling at 3410 Auchentoroly Ter.; swimming pool in basement; dance hall second floor; probably roof garden; cost about \$12,000; plans out about Aug. 1.

Md., Baltimore.—Webb & White, Title Bldg., will erect 6 dwellings at Hill Top Park; frame and stucco; cost about \$24,000.

Md., Glen Arm.—Jos. G. Reynolds, 833 Park Ave., Baltimore, has plans by G. Murray Myers for dwelling at Long Green, R. F. D. No. 2; frame; cost about \$900; bids being taken.

Md., Mt. Washington.—Jas. B. Sweeney has plans by Webb & White, Title Bldg., Baltimore, for dwelling on North Ave., Hill Top Park; 2½ stories; 30x32 ft.; frame; slate roof; hardwood floor; steam heat; electric light; cost \$4,500 plans out July 19; bids opened July 26.

Md., Wardour Station (not a P. O.).—Col. C. A. Doyen is having plans prepared by E. H. Glidden, 1008 Garrett Bldg., Baltimore, for dwelling; 30x40 ft.; 2½ stories; frame and tile construction; slate or shingle roof; pine floor; electric light; cost about \$7,000; plans ready about July 26. (Archt. lately noted preparing plans for client near Annapolis.)

Miss., Coldwater.—C. M. Yates has plans by Ben. Price, Birmingham, Ala., for dwelling; 1 story; bungalow type; frame; composition shingle roof; bids opened about July 24.

Miss., Natchez.—Luther Childs, Philadelphia, Pa., is reported to erect residence on Main St.

Mo., Joplin.—Dr. H. S. Miller will erect \$300 brick bungalow at 118 N. Sergeant Ave.

Mo., Joplin.—L. H. Ruff will erect \$300 residence at 531 N. Sergeant Ave.

Mo., Joplin.—Harry Myers will erect \$300 residence on E. 15th St.

Mo., Joplin.—Leon S. Boucher will erect \$500 residence on N. Moffet Ave.

Mo., Kansas City.—O. L. Carr will erect residence on 58th St.; colonial; brick; cost \$15,000.

Mo., Kansas City.—J. A. Siemon will erect \$7,000 residence at Benton Blvd. and 34th St.

Mo., Kansas City.—Jas. Muri will erect 2-story frame dwelling at 6108 Morningside Drive; 46x35 ft.; cost \$10,000.

Mo., Kansas City.—Fred W. Zurn will erect 2-story frame dwelling at 3928 Walroad Ave.; 35x35 ft.; cost \$6,000.

Mo., Kansas City.—Mary Rogerson will erect 2-story frame dwelling at 4523 Montgall Ave.; cost \$3,500.

Mo., Kansas City.—R. M. Payne will erect 2-story frame dwelling at 103 Rock Spring Rd.; cost \$3,000.

Mo., Kansas City.—Rev. Bert Wilson will erect residence on N. Chelsea Ave.; stone and shingles; cost \$1,500.

Mo., Kansas City.—F. B. Hughes will erect residence at 5925 Wyandotte St.

Mo., Kansas City.—Lee Agee will erect 2-story frame-veneer dwelling at 1121 W. 38th St.; cost \$6,000.

Mo., Kansas City.—Mrs. Emily R. Lowe will erect 2-story stone dwelling at 5329 Sunset Drive; cost \$8,000.

Mo., St. Louis.—Ed Bonsick of Crescent Paper Co. will erect residence.

Okla., Muskogee.—M. Mussellmen is erecting \$15,000 residence.

Okla., Tulsa.—Con Linn will erect residence on N. Denver St.

Okla., Tulsa.—P. G. Walker, Jr., will erect \$20,000 residence on Maple Ridge.

Okla., Tulsa.—Otis McClintock will erect \$12,000 brick residence.

S. C., Charleston.—A. B. Murray has plans by J. D. Newcomer, Charleston, to remodel dwelling; brick; concrete porch; cost \$500.

S. C., Lake City.—J. L. Richardson lets contract July 20 to erect dwelling on Main St.; 9 rooms; ordinary construction; asphalt roof; electric light; cost \$3,000; L. McD. Hicks, Archt. (Lately noted.)

Tenn., Knoxville.—H. L. Dulin will erect residence on Kingston Pike.

Tenn., Maryville.—M. H. Gamble will erect 2-story residence.

Tenn., Nashville.—Geo. I. Wadley, Jr., will erect brick-veneer bungalow on 24th Ave. South; cost \$4,075.

Tenn., Maryville.—Thos. Broady will erect bungalow.

Tenn., Nashville.—Jas. T. Hutchison will erect brick-veneer residence at 815 Russell St.; cost \$3,000.

Tenn., Nashville.—Capital Realty Co. will remodel residence at 110 8th Ave.; Harry J. Frahn, Archt., Nashville.

Tenn., Nashville.—Enterprise Realty Co. will erect 15 or 20 dwellings. (See Dwellings, Contracts Awarded.)

Tex., El Paso.—Wm. Birt will erect 2 brick bungalows in East El Paso; cost \$3,550.

Tex., El Paso.—Phoenix-El Paso Building Co. will erect store and dwelling. (See Stores.)

Tex., El Paso.—J. W. Hoffecker will erect brick bungalow in Manhattan; 31x44x20 ft.; cost \$4,500.

Tex., El Paso.—Coles Building & Real Estate Co. will erect brick residence and garage in Alexander addition; former 30x42x28 ft.; latter 16x20x10 ft.; cost \$500.

Tex., Galveston.—Hans Goldman will erect 3-story frame residence at 3502 Avenue R; cost \$3,000.

Tex., Houston.—M. Finkelstein will erect 10-room cement stucco type roof residence at Clay and Chenevert Sts.; cost \$500.

Tex., Houston.—E. L. Crain & Co. will erect \$10,000 residence at Lovett Blvd. and Mt. Vernon St., Montrose; stucco construction.

Tex., Marlin.—Tom Watson will erect 7-room residence; cost \$4,000.

Tex., San Antonio.—Mrs. T. T. Tygart has plans by Adams & Adams, San Antonio, for residence on Mistletoe Ave.; 5 rooms; hollow tile construction; cost \$5,450.

Tex., Snyder.—H. G. Towle will erect \$600 residence on Spring St.

Va., Gordonsville.—Barton H. Cameron will erect colonial farm residence

Va., Richmond.—C. E. Sprengle will erect 14 brick dwellings and 2 brick buildings for stores and flats on Burton and Venable Sts.; cost \$32,000.

Va., Richmond.—Joseph Hoffman will erect 2-story frame residence on Garland Ave.; slate roof; electric lights; cost \$3,000; Jos. Heye, Contr., Richmond.

W. Va., Bluefield.—Dr. J. E. Martin will erect residence.

W. Va., Glendale.—Kenneth A. Page, Moundsville, W. Va., will erect residence.

W. Va., Wheeling.—Wm. McElroy, City Treasurer, will erect \$4800 residence on S. Chapline St.

GOVERNMENT AND STATE

Ala., Opelika.—Postoffice.—Treasury Dept., Jas. A. Wetmore, Act. Supervising Archt., Washington, D. C., opened bids to erect post-office building; George Clayton, Gould Bldg., Atlanta, is reported as lowest bidder; 3 stories and basement; 5,900 sq. ft. ground area; fireproof, except roof; stone, ornamental terra-cotta and brick facing; wood cornice and parapet; composition roof.

Fla., Palatka.—Postoffice.—Treasury Dept., Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., receives bids until Aug. 27 to erect postoffice, including mechanical equipment, lighting fixtures and approaches; 1 story and mezzanine; stone and brick-faced; 4720 sq. ft. ground area; partly fireproof; composition roof; drawings and specifications at office of Mr. Wetmore as above, and Custodian at Palatka.

HOSPITALS, SANITARiums, ETC.

Fla., St. Augustine.—State Board of Control receives bids until Aug. 9 at Hotel Mason, Jacksonville, to erect hospital building at State School for Deaf and Blind. (See Schools.)

Ky., Henderson.—City is having plans prepared by Gilbert, Fabian & Brentano, Evansville, Ind., for hospital; cost \$25,000.

Okla., Enid.—State Board of Public Affairs, Oklahoma City, receives bids until July 22 to erect buildings at Institute for Feeble-Minded. (See Okla., Vinita.)

Okla., Vinita.—State Board of Public Affairs, J. M. Aydelotte, Chmn., Oklahoma City, receives bids until July 22 to erect buildings for East Oklahoma Hospital and Institute for Feeble-Minded at Enid, Okla.; plans and specifications at office of board.

S. C., Chester.—Magdalene Hospital, owned by Dr. S. W. Pryor, will move dwelling and remodel and convert into hospital.

Tenn., Nashville.—Davidson County Court, W. M. Pollard, Judge, appropriated \$25,000 for improving tuberculosis hospital.

Tex., Austin.—Travis county defeated \$150,000 hospital bonds. (Lately noted.)

Tex., Beaumont.—Jefferson county votes Aug. 20 on \$25,000 bonds to erect hospital for insane in connection with city jail. Address County Commrs. (Lately noted.)

HOTELS

Ala., Haleyville.—Cleare Hotel will erect building to replace burned structure.

Fla., Key West.—Dr. J. B. Maloney and others practically completed arrangements to erect tourist hotel; reinforced concrete; 5 stories; 160x150 ft.; 100 rooms, of which 85 will have private baths; contemplates to begin construction Aug. 1 and complete Jan. 1; cost \$150,000; furnishings, \$25,000. (Lately noted.)

Fla., Tampa.—E. H. Barney will expend \$3,000 to install 14 additional bathrooms in Olive Hotel.

La., Abita Springs.—Abita Hotel Co. organized with \$50,000 capital stock by L. A. Block, Prest. of Mutual Liquor Co., New Orleans, and others; will rebuild Block Hotel at cost of about \$50,000, provide swimming pool 300x250 ft., ranging in depth from 1 to 8 ft.; erect 20 cottages, provide tennis court, etc.

Mo., Kansas City.—Edw. Kionka plans to erect family hotel on Jefferson St.

N. C., Wilmington.—J. H. Hinton is reported to erect 14-story hotel to contain about 180 rooms. Mr. Hinton wires Manufacturers Record: "Plans being prepared by Kenneth Murchison, 161 Park Ave., New York; details not decided."

Tenn., Chattanooga.—Signal Mountain Co. of Hamilton Co. incipd. with \$50,000 capital stock by C. E. James, M. B. Ochs, J. F. Johnston and others; will ultimately acquire Signal Mountain property and improve; plans to erect 100-room addition to Signal Mountain Inn, etc.; completion by Oct. 1.

Tex., Tahoka.—J. E. Stokes plans to erect fireproof hotel.

Tex., Tahoka.—A. D. Shook is reported to erect hotel; 2 stories; 20 rooms; lower floor for store.

MISCELLANEOUS

Ala., Eufaula.—Clubhouse.—Eufaula Country Club has plans by Frank Lockwood, Montgomery, Ala., for clubhouse on Barbour St.; frame; shingle roof; partly hardwood floor; city light; cost about \$3,500; bids opened in about 3 weeks. Address A. B. Roberts, Eufaula. (Lately noted.)

Fla., Key West.—Grandstand.—Key West Baseball and Amusement Park, A. H. McInnis, Secy., has plans by Wells & Wisch, Key West, for grandstand at White St. and Country Rd.; grandstand 40x30 ft.; bleachers 140x24 ft.; ordinary construction; galvanized roof; cost \$3,500; construction begun.

Fla., Punta Gorda.—Markets.—Chadwick Bros., West Coast Fish Co. and Punta Gorda Fish Co. will erect buildings to replace structures lately noted damaged by fire; probably corrugated sides and roofs.

Fla., Tampa.—Home.—Old People's Home, Mrs. E. D. Hobbs, V.-P., plans to erect new building or repair present structure.

Mo., St. Louis.—Stable.—H. Waldermeyer will erect 2-story stable at 1817 S. 3d St.; cost \$4,000; construction by owner.

Mo., St. Louis.—Clubhouse.—Sunset Hill Country Club is reported considering erecting clubhouse and providing 18-hole golf course, etc.

Tenn., Memphis.—Clubhouse, etc.—Lake View Fishing & Hunting Club organized by Dr. N. F. Raines, Raines, Tenn., and W. E. Nelson; will erect clubhouse; sink artesian well, establish bathing beach, etc.; completion by about Sept. 1.

Tex., Dallas.—Restaurant.—John R. Thompson Co., Chicago, will erect restaurant building at 1530-22 Main St.; 2 stories and basement; white enamel brick; cost \$35,000.

Va., Richmond.—Clubhouse.—Woman's Club will erect auditorium to seat 600.

W. Va., Parkersburg.—Market and Convention Hall.—Board of Commerce is considering site to erect market-house and convention hall; cost about \$60,000.

RAILWAY STATIONS, SHEDS, ETC.

Mo., St. Louis.—St. Louis Ry. & Dock Co., John T. Moore, 812 Olive St., V.-P., will build freight depots. (See Miscellaneous Enterprises.)

N. C., Goldsboro.—Car Barn.—Goldsboro Electric Ry. Co. will erect car barn on N. William St.; 64x40 ft.; contain space for storing and repairing cars, room for generator and office, etc.

SCHOOLS

Ala., Anniston.—City, J. L. Wilke, Mayor, votes Sept. 13 on \$20,000 school bonds.

Ala., Girard.—City votes Aug. 9 on \$25,000 bonds to include \$15,000 to erect school building; Earl Morgan, Mayor. (Noted in June.)

Ala., Lott.—School Dists. Nos. 4 and 10, Pointe Coupee parish, sold \$21,000 bonds to erect schools at Lott and Fordoche. Address School Trustees.

Ala., Pell City.—City is having plans prepared by D. O. Whildin, Birmingham, to remodel school and erect auditorium in connection.

Fla., Crystal River.—Board of Public Instruction is considering purchase of site and erection of school.

Fla., Eagle Lake.—Eagle Lake School Dist. opens bids July 29 to erect building; W. R. Biggers, Archt., Tampa. (Lately noted.)

Fla., Fort Meade.—Polk County School Board, Bartow, Fla., adopted plans and specifications by W. R. Biggers, Tampa, for school building; 10 rooms; auditorium to seat 1000; connect with present building, to which alterations will be made; cost about \$25,000. (Noted in April.)

Fla., Palmetto.—School Dist. defeated \$50,000 bond issue to erect school. (Noted in June.)

Fla., Silver Palm.—Special School Tax Dist. No. 7 plans to issue \$25,000 bonds to build and equip schools.

Fla., St. Augustine.—State Board of Control receives bids at Hotel Mason, Jacksonville, until Aug. 9 to erect negro school building and hospital building for State School for Deaf and Blind; plans and specifications at office of Edwards & Sayward, Architects, 633 Candler Bldg., Atlanta, Ga., and office of School at St. Augustine. (Noted in May.)

Fla., St. Augustine.—Cathedral, Rev. J. J. O'Brien, pastor, has plans by Fred A. Hendrich, St. Augustine, for parochial school; frontage 100 ft.; 3 stories; fireproof; pressed brick; finished in stucco; terra-cotta trimmings; Spanish tile roof; cost \$10,000. (Previously noted.)

Fla., Tampa.—Hillsboro County School Board opened bids to erect Moody Heights School; M. F. Lopez, Tampa, is lowest bidder at \$21,628; will request Curtis & Adams, Architects, Tampa, to modify plans so building cost will come within \$20,000 available. (Lately noted.)

Fla., Tarpon Springs.—Curlew School Dist. will vote on \$5000 bonds to erect school. Address Dist. School Trustees.

Fla., Titusville.—Special Tax School Dist. No. 1, Brevard county, votes Aug. 10 on \$100,000 bonds for school improvements; has plans by A. E. Lewis, Miami, for graded and high school; fireproof; cost \$65,000. (Noted in June.)

Ga., Augusta.—Board of Education is reported to convert city hospital building on Richmond Academy property into dormitory.

Ga., Augusta.—Richmond Academy plans to erect alumni auditorium; cost \$20,000.

Ga., Coolidge.—Town votes July 23 on \$6000 bonds to erect school; G. T. Knight, Mayor.

Ga., Winder.—City, H. G. Elder, Supt., Dr. J. T. Wages, Chmn., Building Comm., has plans by Jas. J. Baldwin, Anderson, S. C., for school building; ordinary construction; steel work; terra-cotta trim; Barrett specification roof; cost about \$40,000; construction by city with day labor. (Lately noted.)

Ky., Covington.—St. Augustine's Church is having plans prepared by Howard McCloy, Cincinnati, for school; 10 classrooms; 150x50 ft.; cost about \$25,000.

Ky., Dixon.—City will erect school; 6 rooms; central heating plant; cost about \$10,000. Address The Mayor.

La., Fordoche.—City sold bonds to erect school. (See Schools, La., Lott.)

La., Harahan City.—Jefferson Parish School Board will erect school in Harahan City.

Md., Baltimore.—Johns Hopkins Medical School is having plans prepared by Archer & Allen, Central Savings Bank Bldg., Baltimore, for laboratory building at Madison and Wolfe Sts.; 5 stories; reinforced concrete; mushroom style construction; brick curtain walls; cost about \$110,000; plans ready about July 25. (Lately noted.)

Md., Baltimore County.—Baltimore County Comms., Towson, Md., are having plans prepared by Smith & May, 1133 Calvert Bldg., Baltimore, for school building on Cold Spring Lane near York Rd.; 12 rooms; brick; slag roof; steam heat; plans ready about Aug. 4.

Mo., Appleton City.—Board of Education

will erect high school; J. H. Felt & Co., Archts., Kansas City, Mo.

Mo., Morley.—Town will erect \$10,000 school. Address Town Clerk.

Mo., Yates.—Court ruled against bond issue for Yates School Dist. (Noted in June as having plans prepared for school.)

N. C., Bonlee.—School Board will erect dormitory for high school; 34x66 ft.; mill construction; tin shingle roof; wood floors; cost \$3000. (Lately noted.)

N. C., Burlington.—Supt. of Public Schools receives bids until July 29 to erect school; plans and specifications at office of Linthicum & Linthicum, Archts., Durham, N. C. (Lately noted to have voted \$10,000 bonds.)

N. C., Durham.—Durham County Board of Education receives bids until July 30 to erect agricultural and home economics building at Lowe's Grove farm life school; 2 stories; 4 rooms; agricultural laboratory; plans and specifications at office of C. W. Massey, Supt. of County Schools.

N. C., Greensboro.—City voted \$60,000 bonds to erect schools, to include addition to West Lee Street School, 2 buildings in northern section of city, also building on Bragg St. and negro school on E. Washington St.; plans for two latter structures prepared; T. J. Murphy, Mayor.

N. C., North Charlotte.—Mecklenburg County Board of Education, Charlotte, acquired site and will erect 4-room school.

N. C., Raleigh.—Raleigh township will vote about Sept. 15 on \$100,000 school bonds; Frank M. Harper, Supt. Schools. (Lately noted.)

N. C., Salisbury.—Livingstone College, W. H. Goler, Prest., will erect girls' dormitory; 3 stories and basement; 160x36 ft.; brick; south wing 80x34 ft.

Okla., Bixby.—School Board, G. E. Harris, Clerk, Bixby, and A. H. Mott, Archt., 29 Nebraska Bldg., Tulsa, receive bids until July 27 to erect 2-story brick addition to public school; plans at office of Clerk and architects as above.

Okla., Ponca City.—Board of Education will erect school; 1 story; brick and stone; 2 rooms.

Okla., Glen Pool.—Board of Education receives bids until July 24 to erect addition to and install heating and plumbing in school building; plans and specifications at office of Clerk of Board, Glen Pool, and A. Endacott, Archt., Tulsa, Okla. (Previously noted.)

Okla., Ringling.—Town has plans by F. E. Fagerquist, Oklahoma City, for school; buff brick; Bedford stone trimmings; fireproof corridors and stairways; voted \$15,000.

Okla., Red Fork.—School Dist. No. 23 receives bids until July 26 addressed to O. C. Brooks, Brooks' Store, Red Fork, to erect school building; plans and specifications at office of M. C. Cross, Archt., Room 30, Nebraska Bldg., Tulsa, Okla.

Okla., Wilson.—Board of Education of Wilson School Dist. No. 43 will erect school about 2 miles northwest of Wilson.

S. C., Anderson.—Building Com. of Anderson School Dist. No. 17 will erect 2-room industrial arts building on W. Market Street School lot; Casey & Fant, Archts., Anderson; further information from E. C. McCants, Supt.

S. C., Timmonsville.—Florence County School Board has plans by L. McD. Hicks, Florence, S. C., for school building at Jones Store, R. F. D. No. 1; 67x76 ft.; 2 stories; 4 classrooms; frame; cost about \$3500; plans ready July 25.

Tenn., Blythewood.—Blythewood School Dist. will vote on \$7000 bonds to erect school; 6 rooms; brick; domestic science and manual training equipment; J. M. Hawley, Lee Muller and C. D. Wilson, Trustees.

Tenn., Jacksboro.—School Dist. issued \$7000 bonds to erect school; Wm. Allen, County Judge, Jacksboro.

Tenn., Knoxville.—Park City Council passed ordinance for issuance of \$15,000 bonds to erect addition to Park City high school; plans in progress; will contain lunchroom, manual-training and domestic-science rooms and several recitation rooms. Address School Trustees. (Lately noted.)

Tenn., Knoxville.—City is having plans prepared by Albert Baumann, Knoxville, for school at Glenwood and Luttrell Sts.; 2 stories; 55x106 ft.; ordinary construction; gravel roof; wood floor; steam heat; electric light; cost \$20,000; contract let about Aug. 4. (Lately noted.)

Tenn., Lenoir City.—City votes Aug. 21 (extended date) on \$15,000 bonds to include \$5000 to erect school building. Address The Mayor. (Lately noted to vote Aug. 7.)

Tenn., Nashville.—Davidson county will not issue school bonds. (County Court lately noted authorizing vote on \$225,000 school bonds.)

Tenn., Sweetwater.—City will vote on \$10,000 bonds for schools. Address The Mayor.

Tex., Humble.—Joe Lyle, County Supt. of Education, Houston, Tex., receives bids until July 26 to erect 2-story brick addition to school; plans and specifications at office of P. S. Glover & Son, Archts., Houston.

Tex., Jefferson.—Common School Dist. No. 7 of Marlon county votes Aug. 17 on \$28,000 bonds to erect brick school; P. G. Henderson, County Judge.

Tex., Mt. Calm.—Mt. Calm School Dist. voted bonds for schools. Address District School Trustees.

Tex., Nacogdoches.—Nacogdoches School Dist. Trustees are reported to have called off election on \$60,000 school bonds. (Lately noted.)

Tex., Shepherd.—School Dist. voted \$12,000 bonds to erect school building. Address School Trustees.

Tex., Turnersville.—School Board opens bids Aug. 2 to erect school; gravel roof; cost about \$8000; H. D. Pampel, Archt., Temple, Tex. (Lately noted.)

Va., Danville.—School Board receives bids until July 28 at office of Pritchett & Henderson, Archts., Dudley Block, Danville, to erect Stonewall Jackson Graded School; 118x106 ft.; mill construction; Barrett specification roof; plans and specifications at office of architect as above; heating contract let separately through Wiley & Wilson, Consult. Engrs., Lynchburg, Va. (Lately noted.)

Va., Richmond.—School Board will erect school on Fulton Heights; 24 classrooms and auditorium to seat 1000.

Va., Richmond.—School Board, C. P. Walford, Clk. and Supr., Administration Bldg., 805 E. Marshall St., receives bids until July 29 to erect addition to Fairmont School on 21st St. and addition to Moore School on Moore St.; separate bids required for each building, namely (a) to erect building, (b) install heating and ventilating; plans and specifications by C. M. Robinson, Inc., Times-Dispatch Bldg., Richmond.

W. Va., Dunbar.—Board of Education, Union Dist., J. R. Finney, Prest., Institute, W. Va., opens bids Aug. 1 to erect high-school building; 51x62 ft.; ordinary construction; composition roof; wood joist floor; furnace heat; cost \$10,000; Paul M. Eagan, Archt., Charleston-Kanawha, W. Va., Address Archt. Lately noted. (See Machinery Wanted—Heating System.)

W. Va., Parkersburg.—School Board has plans by Frank L. Packard, Columbus, O., to erect high school; fireproof; 240x180 ft.; 3 stories, including ground floor; bids opened Aug. 11; voted \$250,000 bonds. (Previously noted.)

W. Va., Princeton.—City plans to issue \$25,000 bonds to erect and maintain high school. Address The Mayor.

W. Va., Ridgeley.—School Board, Alaska, W. Va., will erect school building; 4 rooms; ordinary construction; slate roof; wood floors; cost \$5000.

STORES

Ala., Birmingham.—Patton-Polk Drug Co. is having plans prepared by Salle & Mewhinney, Birmingham, for improvements to building.

Ala., Birmingham.—C. J. and J. R. Smith will expend \$5000 to repair building at 1912-14 1st Ave.

Ark., Hazen.—T. M. Ingram, Lewisville, Ark.; B. B. Parish and R. L. Boyd, both of Pine Bluff, Ark., plan to establish wholesale grocery and erect building.

Fla., Bradentown.—J. W. Stevens will erect two 2-story brick buildings in addition to buildings under construction.

Ga., Atlanta.—Miss Leo Morris will expend \$7800 to repair building at 87 Park St.; day labor.

Ga., Augusta.—F. W. Woolworth & Co., New York, are reported to expend \$7000 to remodel building.

Ga., Augusta.—Forsheim Co. is reported to expend several thousand dollars to remodel stores occupied by Green & Horsey and Do-Drop-In.

Ga., Augusta.—United Cigar Co. leased building at Jackson and Broad Sts. and will remodel at cost of \$5000.

Ga., Augusta.—Von Kamp, Vaughan & Gerald will remodel building at 558 Broad St.; will extend in rear, etc.; later remodel front; cost \$5000.

Ga., Augusta.—W. F. Cavanaugh is having plans prepared for ornamental front for building at 1128 Broad St.

Ga., Uvalda.—H. Groher will erect 2-story brick building; completion by Jan. 1.

Md., Baltimore.—Safe Deposit & Trust Co., 9-11 South St., will remodel building at 1042 N. Howard St. for occupancy by Meyer & Thalheimer, stationers; 5 stories; 50x110 ft.; interior remodeling; store front.

Miss., Laurel.—L. Fine is reported to erect 3-story brick building; completion by Jan. 1.

Mo., Joplin.—Taylor Snapp will erect third-story addition to building at 613 Main St.; cost \$25,000.

Mo., Kansas City.—Arthur C. Blacy will erect 1-story brick business building at 404-06 E. 18th St.; cost \$3000.

Mo., Kansas City.—Albert Schoenberg of Schoenberg Realty & Investment Co., representing Buchholz family, will erect building at 1916-22 Grand Ave. to replace present structures; details not determined.

Mo., St. Louis.—C. E. Lund will erect store and apartment building. (See Apartment-houses.)

N. C., Raleigh.—W. L. Brogden will expend \$4500 to improve store building at 215 S. Wilmington St.

Okla., Drumright.—Massad & Kraker will erect store building on Broadway; 25x75 ft.; 2 stories; fireproof; brick; cost about \$4500. (Noted in June.)

Okla., Tulsa.—A. C. Johnson and P. J. Hurley will erect 1-story brick and cement store and garage; cost \$13,000.

S. C., Camden.—Henry Savage will erect store and office building at Broad and De Kalb Sts.; cost about \$40,000.

S. C., Columbia.—Elford Department Stores, J. B. Elford, Prest., Charlotte, N. C., is reported to remodel Diercks Bldg. at Main and Taylor Sts.

Tenn., Johnson City.—M. I. and L. D. Gump will erect business building; 2 stories and basement.

Tenn., Nashville.—R. L. Douglass will erect brick building at 127 Second Ave.; cost \$980.

Tenn., Nashville.—Nashville Property Co. opens bids July 26 to erect 3-story brick store and office building at Church St. and Polk Ave.; Thos. W. Gardner and Edw. E. Dougherty, Archts., Nashville. (Lately noted.)

Tenn., Nashville.—M. E. Derryberry will erect brick store building at 138-40 6th Ave. S.; also brick store at 138-46 2d Ave. S.; Asmus & Norton, Archts., Nashville.

Tex., De Leon.—C. R. Ayres will erect brick store and garage.

Tex., El Paso.—Phoenix-El Paso Building Co. will erect brick store and dwelling in Bassett addition; 24x32x17½ ft.; cost \$3500.

Tex., Fort Worth.—Van Zandt Jarvis will expend \$4000 to repair brick building at 315 Houston St.

Tex., Fredericksburg.—Henry Schaefer will erect business building; brick; cost \$10,500; J. E. Bridgeman, Archt.; construction begun.

Tex., Galveston.—John F. Grant will remodel front of building on Ave. F; cost \$5000.

Tex., San Antonio.—Campbell-Locke-Cunningham Co. will erect brick addition to store building in block 913 on W. Commerce St.; cost \$10,000.

Tex., Tahoka.—A. D. Shook is reported to erect store and hotel. (See Hotels.)

Tex., Tahoka.—J. S. Wells and H. M. Larkin are having plans prepared for 12 brick mercantile buildings.

Va., Norfolk.—S. D. Scott has plans by Neff & Thompson, Norfolk, to remodel store building on Granby St.; alter front; provide 2 stores on first floor, etc.

Va., Norfolk.—Woodhouse Electric Co. Inc., Jonathan Woodhouse, Prest., will erect store building at Bank and Williams Sts.; brick; terra-cotta trimmings; 3 stories; 43x65 ft.; cost \$30,000.

Va., Richmond.—Solomon Cooper, Louis Scott and Morris Cooper will erect store building on Bollingbrook St.

W. Va., Davy.—A. T. Lusk will rebuild structure noted damaged by fire at loss of \$4000; cement or concrete block construction.

W. Va., War.—War Creek Supply Co. has plans by A. F. Wyrong, Princeton, W. Va., for store; 2 stories and basement; 58x80 ft.; brick; asphalt roof; wood and concrete floor; electric light; cost \$3500. Address H. M. Muers, Yukon, W. Va.

THEATERS

Miss. Hattiesburg.—Gulf Arm & Crescenting Co., R. R. Akers, Pres., will erect Lomo Theater on W. Pine St.; 34x150 ft.; 2 stories; brick and concrete; seating capacity 1000; gold fiber screen; stage 35 ft. deep; plans in progress.

Mo., Kansas City.—Royal Theater will erect frame balconies on concrete base at 2224 Main St.; cost \$5000. Address The Manager.

Mo., St. Louis.—Orpheum Theater Co. (Louis A. Cella and others) is reported to submit specifications for theater at 9th and St. Charles Sts. to contractors July 20; 115x125 ft.; pink terra-cotta; fireproof steel construction; seating capacity 3000; elevator with capacity of 25 people; stage 35x115 ft.; cost \$150,000. (Previously noted.)

Okla., Oklahoma City.—Street & McCall have plans by C. Howard Crane, Detroit, Mich., for theater on Robertson St.; 55x175 ft.; fireproof; concrete floor; modern heat-

ing and cooling system; cost about \$50,000; bids opened Aug. 1; contract let Aug. 10. Address L. H. Bailey, Colcord Bldg., Oklahoma City. (Lately noted as having plans prepared by Mr. Bailey.)

WAREHOUSES

Ala., Dothan.—Central Warehouse & Gin Co. organized with \$75,000 capital stock by J. R. Young, Pres. of Houston Natl. Bank; John Sanders and W. C. Pilcher; will erect bonded warehouse, operate gins and handle farm products on commission basis.

Tex., Austin.—T. J. Caldwell is reported interested in organizing company with \$5000 capital stock to erect 2000-bale cotton warehouse.

Tex., Galveston.—Galveston Cotton & Warehouse Co. will erect cotton shed; cost \$15,000.

W. Va., Wheeling.—Wheeling Corrugating Co. will not erect warehouse, as lately reported.

dian, to erect jail; turaker job; 3 stories; 38.6x42.6 ft.; fireproof; reinforced concrete; Barrett specification roof; gravity steam heat; C. M. Card, Archt., Meridian. Address contractor. (Lately noted.)

Mo., Huntsville.—Library.—City let contract to L. W. Dumas Construction Co., Columbus, Mo., to erect library; 30x50 ft.; ordinary construction; tile roof; oak floor; steam heat let separate to J. Kehoe, Moberly, Mo.; electric light from present isolated plant; cost \$10,000; Ludwig Abt, Archt., Moberly, Mo. (Noted in March.)

Tex., Tyler.—Jail.—Smith county let contract to L. R. Wright Constr. Co. to erect jail; 3 stories and basement; fireproof; composition roof; reinforced concrete; cost \$22,738; low-pressure gravity steam heat, \$2394; Sanguinetti & Stants, Archts., Fort Worth; opens bids for jail cells July 22. (Noted in June.)

COURTHOUSES

Fla., West Palm Beach.—Evert P. Maule, West Palm Beach, general contractor to erect Palm Beach County Courthouse, let following sub-contracts: Brick and tile, Dade Lumber Co.; Venetian blinds and plumbing, Palm Beach Mercantile Co.; electric work, Alcazar Electric Co.; all of West Palm Beach; Indiana limestone, Hoadley Stone Co., Bloomington, Ind.; marble and tile, Jones & Branch Co., Atlanta, Ga.; steel and ornamental iron, Southern Foundry Co., Owensboro, Ky.; mill work, Duval Planing Co., Jacksonville, Fla.; granite, Arabia Granite Co., Lithonia, Ga.; plans by Talley & Summer, Jacksonville, call for structure 160x70 ft.; fireproof; cost about \$125,000. (Previously noted.)

Ky., Lawrenceburg.—Stair & Powers, Dead-erick Bldg., Knoxville, Tenn., general contractors to erect courthouse for Anderson county, let following sub-contracts: Brick, concrete and carpenter work, painting and glazing, Capitol Lumber Co., Frankfort, Ky.; steel and iron work, Chattanooga Roofing & Foundry Co., Chattanooga; sheet-metal work, John Cruze, Knoxville; metal doors and windows, Mochl Edwards Co.; plumbing, Chas. W. Whitehead, Frankfort; plans by Joseph & Joseph, Louisville, call for building of ordinary and mill construction; cost about \$25,000. (Lately noted.)

DWELLINGS

Ala., Birmingham.—Louis Phillips let contract to T. P. English, Farley Bldg., Birmingham, to erect 2-story brick-veneer residence; tile roof; steam heat; hardwood floors; garage; cost \$10,000; Miller & Martin, Archts., Title Guarantee Bldg., Birmingham. (Noted in June.)

Ala., Birmingham.—Ramey & Blake, Birmingham, have contract to erect 2-story frame residence according to plans by Bem Price, Empire Bldg., Birmingham.

Ala., Birmingham.—Misses Laura and Mattie Hubbard let contract to Ramey & Blake, Birmingham, to erect dwelling at 1403 S. 21st St.; 2 stories; frame; composition shingle roof; hot-water heat; Bem Price, Archt., Birmingham.

Ala., Birmingham.—J. Blomeley, Birmingham, has contract to erect 2-story brick-veneer dwelling; cost \$6000.

Ala., Elba.—W. J. White is reported to have let contract to David Vaughn, Elba, to erect residence.

Ala., Hartsboro.—G. W. Smith, Guerton, Ala., let contract to Hartsboro Machine Shop, Hartsboro, to erect \$4000 residence; 9 rooms.

Ala., Sheffield.—W. S. Hatch let contract to L. D. Turner, Birmingham, to erect dwelling; 2 stories and basement; ordinary construction; slate roof; warm-air heat; Bem Price, Archt., Birmingham.

Ala., Talladega.—Mrs. B. Lewis let contract to J. S. Johnson, Talladega, to erect 6-room residence.

Ala., Tuscaloosa.—W. A. Rose let contract to C. Morton Ayres, Tuscaloosa, to erect residence; 20x77 ft.; 2 stories; frame and brick veneer; composition roof; wood floors; hot-air heat; electric lighting; cost \$5000; Mathews H. Tardy, Archt., Birmingham. (Lately noted under Apartment-houses.)

Ala., Tuscaloosa.—J. D. McQueen let contract to C. Morton Ayres, Tuscaloosa, to erect dwelling.

Ark., Blytheville.—J. E. Bell has plans by and let contract to J. L. Thompson, Blytheville, to erect dwelling; 28x30 ft.; 2 stories; brick veneer; composition rubber shingle roof; hardwood and pine floors; no heating or lighting plants; cost, without equipment, \$2500.

D. C., Washington.—Edgar L. Thomas let contract to F. M. Johnson, 2307 19th St. N. W., to erect 3 dwellings at 4010-14 Georgia Ave.; 2 stories; brick; cost \$1600.

D. C., Washington.—Jos. E. Draley let contract to Peter Fersinger, 1 N. St. N. W., Washington, to erect dwelling at 1215 Kearney St. N. E.; 2 stories; hollow tile; cost \$5000; Julius Wenig, Archt., 721 10th St. N. W., Washington.

D. C., Washington.—J. L. Newbold let contract to Davis Construction Co., 602 Union Trust Bldg., Washington, to move, remodel and erect addition to dwelling on Q St. between 27th and 28th Sts.; two 2-story brick wings; cost \$10,000; T. J. D. Fuller, Archt., 806 17th St. N. W., Washington. (Previously noted.)

D. C., Washington.—S. W. Smith let contract to Lee Hammer, 116 E. Capitol St., Washington, to remodel dwelling at 1411 Hamilton St.; cost \$3000.

D. C., Washington.—Thos. J. Hurney let contract to M. H. Herriman, 1101 Vermont Ave., Washington, to erect dwelling at 1211 Fern St. N. W.; 2 stories; brick; cost \$4000; J. G. Germiller, Archt.

Fla., Orlando.—Miss Alice Quitman let contract to O. M. Larson, Orlando, to erect two-story residence.

Fla., Tampa.—Liarande & Alvarez let contract to F. Lopez, Tampa, to erect 5 one-story frame dwellings at 11th Ave. and 11th St.; cost \$6000.

Ga., Atlanta.—Robt. Zahner let contract to Thomas M. Mann, Ormond St., Atlanta, to erect dwelling at 21 Frederika St.; 2 stories; 9 rooms; frame; ordinary construction; asbestos roof; hot-water heat; city lighting; cost \$5000; Norman Canton, Archt., Hurt Bldg., Atlanta. Address Owner. (Lately noted.)

Ga., Atlanta.—Wade H. Davis let contract to G. H. Bray, 1527 Candler Bldg., Atlanta, to erect dwelling at Briarcliff Rd. and St. Louis Pl.; 10 rooms; frame and brick veneer; tile roof; \$900 steam heat; electric light; cost \$12,000; construction begun; E. E. Dougherty, Archt., Atlanta. (Lately noted.)

Ga., Atlanta.—Mr. Markle let contract to J. F. Higdon, Atlanta, to erect residence; 2 stories; frame; brick foundation; cypress shingles; furnace heat; hardwood floors; tile bathrooms; cement terraces and porches; cost \$4500; Morris & Morris, Archts., 635 Atlanta National Bank Bldg., Atlanta.

Ga., Conyers.—Shelle Elliott let contract to Mr. Downs, Montezuma, Ga., to erect one-story frame residence; 9 rooms; stone foundation; cement tile floor; electric lights; hardwood floors; cost about \$4000; Leila Ross Wilburn, Archt., 305 Peters Bldg., Atlanta.

Ga., Dalton.—Crown Cotton Mills let contract to Gallivan Building Co., Greenville, S. C., to erect 25 tenement-houses; plans by Park A. Dallas Co., Atlanta. (Noted in June to erect 100 houses.)

Ga., Savannah.—A. L. Davis let contract to Standard Investment Co., Savannah, to erect residence.

Ga., Savannah.—Prof. A. R. Halley let contract to Standard Investment Co., Savannah, to erect 2-story residence.

Ga., Savannah.—T. F. Cook let contract to Standard Investment Co., Savannah, to erect residence.

Ky., Louisville.—Theodore Kemnitz let contract to D. J. Willette, Cecil Ave., Louisville, to erect dwelling at 4307 W. Broadway; cost \$7000. (Lately noted.)

Md., Baltimore.—Fleischmann Co. let contract to R. R. Mason Co., 308 W. Madison St., Baltimore, to erect 9 dwellings at 1900-02 N. Gay St.; cost \$10,000; J. E. Laferty, Archt., 11 E. Pleasant St., Baltimore. (Previously noted.)

Mo., St. Louis.—J. Rosen let contract to erect store and dwelling. (See Stores.)

Mo., St. Louis.—J. Dillon let contract to H. Schmidt, St. Louis, to erect 2-story dwelling at 4633 Natural Bridge Ave.; cost \$3300.

Mo., St. Louis.—O. C. Berghaus let contract to E. R. Schuler, St. Louis, to erect dwelling at 2024 Ethel St.; 2 stories; cost \$3000.

Mo., St. Louis.—R. and R. Niedner let contract to G. Witsma, St. Louis, to erect dwelling at 4006 Winnebago St.; 1 story; cost \$4000.

N. C., Greensboro.—Z. V. Strader let contract to Robertson, Strader & Co. to erect dwelling; main building 22x42 ft.; porches 10x56 ft.; kitchen 14x18 ft.; mill construction; woad shingle roof; cost \$4000; electric lighting, \$100; G. Will Armsfield, Archt., Greensboro. (Lately noted.)

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

Fla., New Smyrna.—David Scott let contract to Walter Cooper, New Smyrna, to erect apartment-house; construction begun.

Fla., Tampa.—Dr. S. L. Lowry let contract to W. D. Dimming, Tampa, to erect apartment-house; 2 stories; cost \$10,000.

Ga., Savannah.—W. P. Baldwin let contract to convert building into rooming-house and office building. (See Bank and Office.)

Md., Baltimore.—B. J. Barrett let contract to John J. Moylan, 117 E. Center St., Baltimore, to erect addition to and alter dwelling at 421 N. Fulton St. for apartment-house; addition, 1 story; 8x10 ft.; building of brick; tin roof; hot-water heat; cost of improvements \$3000; John K. Stack, Archt., 12 E. Lexington St., Baltimore.

Md., Frederick.—A. C. McCordell let contract to erect building for apartment-house purposes. (See Stores.)

Mo., St. Louis.—Daisy Kenefick let contract to Bonded Building Co., St. Louis, to erect 2-story tenement-house at 4246 Lafayette St.; cost \$5000.

Mo., St. Louis.—Edw. F. Felthorst let contract to John H. Puerer Realty Co., St. Louis, to erect 2-story tenement-house at 6040A Laclede St.; cost \$4900.

Mo., St. Louis.—E. E. Plank let contract to General Construction Co. to erect 2-story tenement-house at 3886-88 Arsenal St.; cost \$900.

Mo., St. Louis.—Hulda Bleser let contract to August Winkel, St. Louis, to erect 2-story tenement-house at 2257-77 Red Bud Ave.; cost \$7000.

Mo., St. Louis.—Samoto Realty & Building Co. will erect 2 tenement-houses at Allen and Mississippi Aves.; 2 stories; one 58x34 ft.; other 33.6x46 ft.; ordinary construction; tile sloped and flat composition roof; cost about \$15,000; furnace heat, about \$1200; S. J. Coultas, Archt., 5912 Deliverville Ave., St. Louis; no general contract; work has been sublet. (Noted in June.)

N. C., Charlotte.—Thos. J. Davis let contract to J. A. Gardner, Charlotte, to erect apartment-house on 10th Ave.; brick.

Tenn., Nashville.—J. M. Foster let contract to J. B. Wright, Nashville, to erect apartment-house on 16th Ave.; 2 stories; brick; O. J. Billis, Archt., Nashville. (Lately noted.)

Tex., El Paso.—Jas. L. Marr, Agt., Caples Bldg., let contract to Jolly & Morris, 212 Caples Bldg., El Paso, to remodel building at San Antonio St. and Broadway; upper 2 stories for furnished rooms; ordinary construction; cost \$10,500; O. H. Thorman Co., Archts., El Paso; construction begun.

Tex., Galveston.—H. Sheffield, Jr., let contract to Geo. N. Sheffield, Galveston, to erect apartment-house on Boulevard; fireproof; cost \$18,900; plans by Mr. McLelland, Houston. Address owner. (Lately noted.)

Va., Norfolk.—Jas. O. Persons let contract to Chas. H. Plummer, Norfolk, to erect addition to and remodel dwelling at 321 Ward Ave. for apartment-house; 3 stories; mill construction; slate roof; hot-water heat; electric light; cost \$3000; date of beginning construction indefinite; Harvey Abrames, Archt. (Lately noted.)

ASSOCIATION AND FRATERNAL

Ky., Lexington.—Y. M. C. A., D. C. Cruise, Secy., let contract to William Curran & Son, Lexington, to remodel building; 3 stories;

27 rooms; shower and tub baths on each floor; connected with main building by covered causeways; cost about \$5000; F. J. Manley, Archt., Lexington. (Lately noted.)

Ky., Louisville.—Y. W. C. A. let contract to Geo. H. Rommel Co., 639 S. Campbell St., Louisville, to erect building for dormitory and offices; 100x150 ft.; 4 stories; fireproof; composition roof; concrete floor, maple overlaid; heating and lighting undecided; about 85 sq. ft. vault lights; cost \$150,000; John Bacon Hutchings & Sons, Archts., Louisville; lately noted. Address contractor. (See Machinery Wanted—Cement, Portland; Flooring, Maple.)

N. C., Lexington.—Erlanger Cotton Mills, Geo. W. Mountcastle, Treas., let contract to W. Lee Harbin, Lexington, to erect Y. M. C. A. building.

BANK AND OFFICE

D. C., Washington.—Builders and Manufacturers' Exchange let contract to A. H. Aylor, 82 Session Pl. N. W., Washington, to erect addition to and remodel building at 711 13th St. N. W.; add 2 stories; interior remodeling; contractor taking sub-bids.

Ga., Savannah.—W. P. Baldwin is reported to expend several thousand dollars to remodel O'Dell property on Congress St. for rooming-house and office building; finish exterior in stucco, etc.; Falquer McRae, contractor, Charlotte.

Mo., Baring.—Baring Exchange Bank, S. C. Huston, Cashr., has plans by Ludwig Abt, Moberly, Mo., for bank building; 25x100 ft.; ordinary construction; asbestos built-up roof; tile and yellow-pine floor; steam heat let to J. M. Mudd, Edina, Mo.; electric light from present private plant; cost \$3000; Ludwig Abt, Archt., Moberly, Mo.; work by day labor and sub-contractors.

Va., Danville.—L. M. Francisco is reported to have let contract to erect store, office and hall building. (See Stores.)

CHURCHES

La., New Orleans.—Loyola University, Rev. A. E. Otis, Pres., let contract to Jefferson Construction Co., New Orleans, to erect McDermott Memorial Church of the Gesù; Tudor-Gothic style; seating capacity 1000; main tower 160 ft. high; cost about \$150,000; main altar to cost \$10,000.

Tex., San Marcus.—Missionary Sons of Mary of San Antonio, Tex., let contract to J. C. Dielmann, 306 E. Commerce St., San Antonio, to erect church and rectory; church 40x100 ft.; rectory 30x100 ft.; mill construction; tin roof; wood floor; cost \$20,000; Leo M. J. Dielmann, Archt., 306 Commerce St., San Antonio. Address Archt. (Lately noted.)

CITY AND COUNTY

Ark., Bridge Junction (not a postoffice)—Officers.—St. Francis Levee Board let contract at \$657.25 to Memphis Building Co., Memphis, Tenn., to erect office building; 33 ft. 6 in. by 44 ft. 4 in.; 2 stories; terra-cotta walls with stucco finish; concrete foundation; probably electric lights; concrete vault; completion by Oct. 1.

Ga., Savannah.—Library.—City let contract at \$62,766 to A. A. Artley, Savannah, to erect library building at Bull and 36th Sts.; 61x91 ft.; 2 stories and basement; fireproof; gravel roof; reinforced concrete floors; H. W. Witcover, Archt., Savannah. (Lately noted.)

Miss., Meridian.—Jail.—City let contract at \$11,400 to Standard Construction Co., Meri-

N. C., High Point.—Dr. J. W. Austin let contract to J. O. Connor, High Point, to erect dwelling on Roland Park Circle; 33x36 ft.; brick veneer; cement-fill roof; hardwood floor; \$500 hot-water heat, bought; \$120 electric fixtures; cost \$6000; Herman R. Hersh, Archt., Altoona, Pa. (Noted in February.)

S. C., Anderson.—Mrs. N. B. Sullivan let contract to J. L. Hembree, Anderson, to erect residence on S. Main St.; 2 stories and basement, 79x84 ft.; tapestry brick veneer; stone trimmings; Spanish tile roof; hardwood floors; tile on porches; beam ceilings; paneled wainscot; hot-water heat; electric light; vacuum cleaner; laundry in basement; cost \$15,000; Casey & Fant, Archts., Anderson.

S. C., Due West.—Dr. R. M. Stevenson let contract to H. H. Mundy, Abbeville, S. C., to erect residence; cost \$3175; let contract for plumbing to T. P. Kind, Greenwood, S. C.; J. E. Summer, Archt., Greenwood. (Lately noted.)

S. C., Paeolet.—Paeolet Mfg. Co. is reported to have let contract to Fiske-Carter Construction Co., Greenville, S. C., to erect dwellings and remodel others at cost of about \$75,000 to \$100,000. (Lately noted.)

Tenn., Columbia.—Monte Fariss let contract to J. H. Hill, Columbia, to erect residence.

Tenn., Columbia.—R. S. Hopkins let contract to J. H. Hill, Columbia, to erect residence.

Tenn., Memphis.—Colonial Trust Co. let contract to L. E. Moody to erect brick-veneer dwelling at 1619 Harbert Ave.; cost \$3000.

Tenn., Memphis.—Curtis King let contract to J. W. Crawford, Memphis, to erect residence in Morningside Park; 1 story; 73x60 ft.; colonial style; stucco; wood columns; walnut paneled wainscot in living room; concrete foundation; shingle roof. (Lately noted.)

Tenn., Memphis.—H. N. Smith will erect 2-story 8-room frame and stucco residence; cost \$7000; J. B. Holt, Contr., Memphis.

Tenn., Nashville.—Enterprise Realty Co., 205 Union St., let contract to G. W. McClannahan, 108 S. 11th St., Nashville, to erect 2 dwellings on Bernard Ave.; 1 story; composition shingle roof; oak floor; hot-air heat; cost \$3000 each; C. K. Colley, Archt., 33-40 Life & Casualty Bldg., Nashville; will erect 15 or 20 dwellings of same general character. (Lately noted subcontracts.)

Tex., Fort Worth.—Anna Maxwell let contract to Goddard & Preble, Fort Worth, to erect 1-story frame dwellings at 1205 and 1207 College St.; cost \$2000 each.

Va., Norfolk.—L. B. Tabb let contract to Griffin Bros., Norfolk, to erect residence; 2 stories and basement; 8 rooms and bath; hot-water heat; cost \$4600; 37x30 ft.; slate roof; plans by contractors; all subcontracts let.

Va., Norfolk.—Robt. Vandenburg will erect residence on Graydon Ave.; cost \$3470; S. D. Vronson, Contr., Norfolk.

Va., Norfolk.—S. L. McGonigal has plans by and let contract to Griffin Bros., Arcade Bldg., Norfolk, for dwelling on Pennsylvania Ave.; 26x35 ft.; ordinary construction; slate roof; hot-water heat; cost \$4000; all subcontracts let.

Va., Richmond.—H. C. Allen let contract to R. F. Sheppard, Richmond, to erect residence on 3d Ave.; 2 stories; frame and stucco; slate roof; hot-water heat; electric lights; cost \$4800; I. T. Skinner, Archt., Richmond.

Va., Richmond.—G. E. Beardsley let contract to John Armbrin & Bro., Richmond, to erect residence at 2d and Juniper Sts., Highland Park; 2 stories; 46x52 ft.; frame and stucco; slate roof; hot-water heat; electric lights; cost \$5500; Carnell & Johnston, Archts., Richmond.

Va., Richmond.—H. L. Kerr let contract to Davis Bros., Inc., for residence; 2 stories; frame and stucco; mansard slate roof; hot-air heat; electric lights; cost \$4250.

Va., Richmond.—Walter L. Willis let contract to Singrey-Green Construction Co., Richmond, to erect residence at 610 Stuart Rd.; 2 stories; 36x50 ft.; brick; slate roof; hot-water heat; electric lights; cost \$6000; W. S. Green, Archt., Richmond.

Va., Richmond.—F. E. Brown has plans by J. T. Skinner, Richmond, and let contract to E. L. Bass & Bro., Richmond, to erect residence on Chamberlayne Ave.; 2 stories; frame; slate roof; hot-water heat; electric lights; cost \$4400. (Lately noted.)

W. Va., Princeton.—Dr. G. T. Epling let contract to Jamison & Karnes to erect building for dwelling and dental offices; 30x40 ft.;

2 stories and basement; asphalt slate-shingle roof; wood floors; cost \$4500; heating about \$500; lighting \$125; A. F. Wysong, Archt., Princeton.

GOVERNMENT AND STATE

Tex., Corpus Christi—Postoffice.—Treasury Dept., Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., let contract at \$135,000 to Barnes Bros., Logansport, Ind., to erect postoffice building. (Previously noted.)

HOSPITALS, SANITARIUMS, ETC.

Ga., Fort Oglethorpe.—T. H. Hacker, Construction Quartermaster, let contract to D. F. Brandon, Chattanooga, Tenn., to erect annex to army post hospital; 50x50 ft.; ordinary construction; slate roof; wood and composition floor; cost \$10,766; plans by Government Archt.; construction begun. (Lately noted.)

Md., Baltimore.—Dr. Howard A. Kelly has plans by Jos. Evans Sperry, 400 Calvert Bldg., and let contract to B. F. Bennett Building Co., 123 S. Howard St., both of Baltimore, to remodel sanatorium at 1416-20 Eutaw Pl.

Mo., St. Joseph.—Selden-Breck Construction Co., Fullerton Bldg., St. Louis, general contractor to erect Noyes Memorial Hospital, let subcontract for lumber to N. D. Biles Lumber Co., St. Joseph, and for marble to Sutermeister-Campbell Co., Kansas City, Mo.; plans by Rudolph Meier, St. Joseph, and Richard E. Schmitt, Garden and Martin Chicago, call for 4-story building; 45x150 ft.; cost \$85,000. (Other subcontracts previously noted.)

Va., Charlottesville.—King Lumber Co., Charlottesville, general contractor to erect hospital wing for University of Virginia, let following subcontracts: Mill work, Charlottesville Lumber Co.; plumbing, heating, roofing and ventilating, R. L. Thomas Co.; both of Charlottesville; stone, Economy Concrete Co., New Haven, Conn.; limestone, John A. Rowe Cut Stone Co., Bedford, Ind.; lumber, Menefee-Jordan Lumber Co., Lynchburg, Va.; face brick, Salem Brick Co., Salem, Va.; structural steel and ornamental iron, Richmond Structural Steel Co., Richmond; reinforcing material, Trussed Concrete Steel Co., Youngstown, O.; plans by Walter D. Blair, 559 5th Ave., New York, call for building 50x140 ft.; ordinary construction; tar and gravel roof; cost \$50,000. (Lately noted.)

HOTELS

Va., Petersburg.—Petersburg Investment Corp. let contract to Fulton Brick Works, Richmond, to erect hotel; 6 stories and basement; fireproof; slag roof; concrete and tile floors; electric lighting; heating and elevators not decided; cost about \$200,000; C. M. Robinson, Inc., Richmond. Address Contr. (Lately noted.)

W. Va., Beckley.—Beckley Hotel Co. let contract to Crosier & Freeman, Beckley, to erect Hotel Raleigh; 56x100 ft.; 4 stories; ordinary construction; Johns-Manville built-up roof; tile and wood floors; electric lights; passenger elevator, 5x6 ft.; cost \$40,000; A. F. Wysong, Archt., Princeton, W. Va. Address Contr. (Previously noted.)

MISCELLANEOUS

Tenn., Nashville.—Fair.—State Fair Assn. let contract to M. M. Graham & Co., Nashville, to erect woman's building at State Fair Grounds; Marr & Holman, Archts., Nashville. (Lately noted.)

Va., Danville.—Hall.—L. M. Francisco is reported to have let contract to erect building for hall, etc. (See Stores.)

RAILWAY STATIONS, SHEDS, ETC.

Okla., Drumright.—Oil Fields & Santa Fe Ry., Chicago, let contract to Jos. E. Nelson & Sons, 118 N. La Salle St., Chicago, to erect passenger and freight station; frame; creosoted shingle roof; wood floors; no heating plant; cost \$6900; E. A. Harrison, Archt., Railway Exchange, Chicago. (Gulf, Colorado & Santa Fe R. R. lately reported to erect station.)

SCHOOLS

Ark., Bradley.—Bradley Special School Dist. let contract to W. L. Mercer, Texarkana, Ark., to erect school building; 65x70 ft.; 3 floors; ordinary brick construction; metal shingle roof; wood floors; hot-air heat to cost \$300; Jas. H. Bliss, Archt., Hope, Ark. Address Contr. (Noted in June.)

Ark., Houston.—School Board let contract at \$7832 to Adams & Jenkins, Conway, to erect school; R. P. Morrison, Archt., Little Rock.

Fla., Auburndale.—Polk County Board of Public Instruction, Bartow, Fla., let contract at \$10,918 to J. B. Streator & Co., Lakeland, Fla., to erect school; 2 stories; 70x90 ft.; ordinary construction; Barrett specification roof; Fort & Poteet, Archts., Lakeland, Fla. (Lately noted.)

Fla., Cedar Keys.—School Board let contract to C. T. Dawkins, Cedar Keys, to erect school building; cost \$13,000.

Fla., Milton.—S. F. Fulghum & Co., Pensacola, Fla., Gen. Contrs. to erect school building for Santa Rosa county, let subcontracts as follows: Steel work, Gulf City Boiler Works, Mobile, Ala.; stone work, Capitol Stone Co.; painting, Wm. Wilson, both of Atlanta; plumbing and heating, Chas. A. Born; wiring and fixtures, Peake Electric Co.; both of Pensacola; plans by Walker D. Willis, Pensacola, call for building of ordinary construction to cost \$25,000. (Noted in May.)

Ga., Buchanan.—City let contract to McLenden & White, Buchanan, to erect school building; brick; Barrett specification roof; slate blackboards; direct and indirect steam heat; cost \$15,000; Jas. J. Baldwin, Archt., Anderson, S. C. (Noted in June.)

Ga., Brunswick.—Glynn County Board of Education let contract to J. W. Collins, Brunswick, to erect 4-room school at Southern Junction; cost \$3000.

Ga., Cedartown.—School Commrs., A. H. Van de Vander, Secy., let contract at \$27,200 to Pike Bros., Lagrange, Ga., to erect high-school building, and to Eichberg Heating Co., Atlanta, at \$200 for heating; wiring and plumbing contracts not let; brick structure; stone and terra-cotta trimmings; Barrett specification roof; J. J. Baldwin, Archt., Anderson, S. C.; also let contract to S. L. Clay & Son to erect colored school building; 1 story; brick; 4 classrooms and part basement; cost \$4870; plans also by Mr. Baldwin. (Noted in June.)

Ga., Macon.—Bibb County Board of Education let contract to C. C. Hays, Macon, to erect Union Dist. school, 5 mi. from Macon; 8x84 ft.; 6 classrooms and arcade 31x35 ft.; cost \$6000; M. A. Weir, Archt., Macon.

Ky., Waddy.—Trustees let contract at \$4935 to Cheek Bros., Shelbyville, Ky., to erect school; 6 rooms and auditorium; cost complete \$6600.

Md., Smithsburg.—Trustees let contract to W. Kliner, Smithsburg, to erect school; 8 rooms; brick; A. J. Klinkhart, Archt., 19 W. Washington St., Hagerstown, Md. (Lately noted.)

Miss., Ripley.—School Board let contract to Little-Clecker Constr. Co., Anniston, Ala., to erect school; 56x96 ft.; ordinary construction; Barrett specification roof; steam heat; electric wiring; cost \$10,000; Overstreet & Spencer, Archts., Jackson, Miss. (Lately noted.)

Mo., St. Louis.—Missouri School for Blind let contract to H. O. Hirsch, St. Louis, to alter building at 3815 Magnolia St.; cost \$3000.

Okla., Tulsa.—Board of Education let following contracts in connection with school improvements: At \$230 to Bradley & Hoydel, Tulsa, to remodel Sequoyah School, including repairs to brick work, constructing iron fence on retaining wall, wall to be extended around property, etc.; J. P. Curtin, Archt., Tulsa; at \$235 to Cook & McDonald, Tulsa, to install gravity heating system in Owen addition school; at \$383.16 to Electric Supply Co., Tulsa, for electrical work in same; I. J. Buck, Genl. Contr., Tulsa; plans call for auditorium and 2 rooms and one two-room unit on site adjoining present two-story school. (Lately noted in part.)

Tenn., Clinton.—Anderson County Commrs. are reported to have let contract to Wardre Construction Co., Knoxville, to erect 9 schools in Anderson county; A. B. Baumann, Archt., Knoxville, Tenn.; A. C. Dugliss, Supt. of Schools. (Lately noted.)

Tenn., Knoxville.—Knox County Board of Education let contract to erect additional story to Ramsey School; 3 rooms; cost about \$3000.

Tenn., Memphis.—Shelby County School Board let contract to S. Malkin, Memphis, to erect Treadwell Public School on Highland Ave.; 7 classrooms and auditorium; domestic-science equipment; vapor heating system; water and sewer system; cost about \$25,000; Mahan & Broadwell, Archts., Memphis. (Previously noted.)

Tex., Ennis.—School Board let contract to Lawson & Kimbell, Ennis, to erect school; 2 stories and basement; brick; steam heat; cost \$23,961.50; Sanguinetti & Staats, Fort Worth, Tex. (Lately noted.)

Tex., Littlefield.—School Board let contract to J. L. Scott, Lockney, Tex., to erect school building; 57x27 ft.; frame and brick; tar and gravel roof; electric lighting; cost \$11,773; M. L. Waller & Co., Archts.; David S. Castle, Mgr., 29 Radford Bldg., Abilene, Tex. Address Contr. (Lately noted.)

Tex., Paris.—City let contract to Lloyd Shofner at \$16,950 to erect Gibbons Colored High School; 62x101 ft.; 2 stories and basement; brick and tile; tin roof; edge grain pine floor; electric light reserved; Barry & Smith, Archts., Paris. (Lately noted.)

Va., Norfolk.—J. H. Pierce, general contractor to erect addition to John T. West School according to plans by Brown & Lehman, Norfolk, calling for building 50x100 ft.; fireproof; let following subcontracts: Brick work, E. G. Garrison; roofing and blackboards, Bohn Roofing & Cornice Co.; plastering, Geo. W. Seaward; painting, H. C. Harding; all of Norfolk; cost of addition \$26,000. (Noted in June.)

Va., Whaleyville.—Cypress Dist. School Board let contract to J. C. Ramsay, Suffolk, Va., at \$13,450 to erect school; 8 rooms, with auditorium; brick and cement; slag roof; \$2350 American heat; Sam Stallings, Archt., Suffolk. (Noted in June.)

W. Va., Wheeling.—Harry Miller let contract to Thos. Shimp & Son, Wheeling, to erect 4-room school on Ash Ave., to be leased to Board of Education; 2 stories; concrete blocks; cost \$5000.

STORES

Ala., Birmingham.—J. W. Cooke, Mahan, Miss., let contract to Jesse L. Burns, Birmingham, to erect store at 1923 Third Ave., 25x140 ft.; 3 stories; mill construction; Barrett specification roof; wood floor; Ben Price, Archt., Birmingham; construction begun. (Noted in June.)

Ala., Birmingham.—Jemison Real Estate Co., Agts. for Byron, Lyon & Haas estates, let contract to Smallman & Brice, Birmingham, to erect business building; 2 stories; brick; Miller & Martin, Archts., Birmingham. (Noted in June.)

Ala., Birmingham.—Realty Construction Co., First National Bank Bldg., Birmingham, has contract to erect Ligon Building; Wm. C. Weston, Archt., Brown-Marx Bldg., Birmingham.

Ala., Birmingham.—K. Gosline let contract to B. F. Lee, Birmingham, to erect 2-story brick building; cost \$4000. (Lately noted.)

Ala., Montgomery.—John B. Nicrosi let contract to Hugger Bros., Bell Bldg., Montgomery, to erect building to be occupied by Gruberg-Downing Dry Goods Co., Inc.; 3 stories and basement; 50x125 ft.; brick; tar and gravel roof; cost \$30,000; Fredk. Aufeld, Archt., Bell Bldg., Montgomery.

Ala., Montgomery.—A. Nachman and I. Levystein let contract to H. J. Parrish, Montgomery, to rebuild business building; 2 stories; 70x100 ft.; brick; plate-glass front; tar and gravel roof; tile work; Okel & Cooper, Archts., Vandiver Bldg., Montgomery.

Ark., Harrison.—W. F. Durnil, Monett, Mo., has plans by B. F. Curran, Billings, Mo., for store on northeast corner Square; 30x140 ft.; 2 stories; ordinary construction; Carey roofing; wood floor; electric light; cost \$11,000; construction by architect; all material bought except veneer panels. (Walters Dry Goods Co. lately noted to erect building.)

Ga., Atlanta.—Mrs. Mary G. Thurman let contract to R. M. Walker, Atlanta, to erect business building at 70-72 Whitehall St.; 34x140 ft.; 3 stories and basement; mill construction; gravel roof; steam heat; electric lighting; electric elevator; cost, with mechanical equipment, about \$40,000; Morgan & Dillon, Archts., Atlanta. (Lately noted.)

Ga., Atlanta.—Florsheim Shoe Co. is reported to have let contract to W. H. George Grant Bldg., Atlanta, to improve building, including plate-glass and copper front; hardwood floors; tile work; Horace B. Hammond, Archt., 1429 Candler Bldg., Atlanta.

Ga., Hawkinsville.—H. H. Whitfield let contract to erect brick store building.

Ga., Macon.—Burden, Smith & Co. let contract to W. J. Beeland, Macon, on commission basis, to improve Empire Store building; will install front, change interior, etc.; Alexander Blair, Archt., Macon. (Lately noted.)

Ky., Hickman.—W. T. Griscom let contract to L. N. Gregory to erect store and dwelling in West Hickman; 2 stories; brick. (Noted in June.)

Md., Frederick.—A. C. McCardell let contract to Harlan W. Hagan, Frederick, to erect building to replace burned structure;

RAILROAD CONSTRUCTION

RAILWAYS

Ark., Melbourne.—A. C. Veach of Gravette, Ark., is reported contemplating construction of an electric or other motor railway from Melbourne to a connection with the St. Louis, Iron Mountain & Southern R. R., about 12 mi. Community Improvement Association of Melbourne may also give information.

Ga., Americus.—T. B. Ragan, Prest. Hawkinsville & Western Ry., and others of Hawkinsville, Ga., have made a proposition to the Americus Chamber of Commerce looking to the construction of a railroad from Americus to Hawkinsville, about 50 mi., this to be an extension of the railroad proposed from Byronville to Americus, to be built by the Georgia Lumber Co. of Byronville, J. S. Morton, Prest.

Ga., Cairo.—G. I. Tillman of Valdosta, Ga., is reported to have made survey for the contemplated extension of the Pelham & Havana R. R. from Darsey to Havana, Fla., about 5 mi. Construction to begin soon. J. M. Wilkinson, Valdosta, is Prest.

Md., Baltimore.—The Baltimore & Ohio R. R. Co. says it does not contemplate an extension of its Curtis Bay branch at present. This refers to a late press report that an extension of 1 mi. would be built. F. L. Stuart is Ch. Engr.

Md., Hagerstown.—Cumberland Valley R. R. Co., it is reported, will extend yards and make other improvements at Hagerstown. T. B. Kennedy is Engr. at Chambersburg, Pa.

Miss., Laurel.—Gilchrist-Fordney Lumber Co. is building a logging railroad from Montrose, on the New Orleans, Mobile & Chicago R. R., eastward several miles.

Mo., Bonne Terre.—Concerning the plan of the Mississippi River & Bonne Terre Ry. to increase its stock and bond issues, it is officially stated that the company contemplates no new construction in the near future.

Mo., St. Louis.—John T. Moore, V.-P., says that the St. Louis Ry. & Dock Co., lately incorporated, will build about 25 mi. line from a point on the Missouri River to River Des Peris. Address, 512 Olive St., St. Louis. W. J. Holbrook is Prest.; John Hill, Treas., and E. W. Banister, Secy. Other incorporators are D. Arthur Bowman and F. R. Bell, also of St. Louis. Company also proposes to build docks, grain elevators, freight depots and move traffic expeditiously and economically.

N. C., Burlington.—Alamance, Durham & Orange Ry. & Electric Co. has not yet made survey for its proposed line of about 50 mi. from Ossipee to Durham, N. C., via Glencoe, Hopedale, Burlington, Graham and Chapel Hill. H. G. Palmer & Co., Yorkville, Ill., is Ch. Engr., and also has charge of financing. Junius H. Harden is Prest.; John M. Cook, V.-P.; D. M. Teague, Treas.; C. Brown Cox, Secy. Headquarters at Burlington.

Okla., Peneta.—Tracklaying has begun on the Oil Fields & Santa Fe Ry., to be 15 mi. long northeast from Cushing. M. Cassidy has contract.

Okla., Tulsa.—Sand Springs R. R. Co., Chas. Page of Sand Springs, Prest., contemplates extension of 8 mi. to coal mines.

S. C., Spartanburg.—The Southern Ry. Co. is authorized by the Georgia Railroad Commission to issue \$3,500,000 of bonds for purpose of double-tracking its line between Spartanburg and Central, S. C., and New Holland and Cornelia, Ga. H. Herman is Ch. Engr. Maintenance of Way, Washington, D. C.

S. C., Spartanburg.—Southern Ry. Co., it is reported, has improvement plans for its facilities at Spartanburg which will require the construction of new tracks and the rearrangement of existing track. W. H. Wells, Washington, D. C., is Ch. Engr. of Constr.

Tenn., Centerville.—Officers of the Nashville, Chattanooga & St. Louis Ry. are reported to have signed papers to extend its Valley line 3 mi. to phosphate fields at Tottys Bend. H. McDonald, Nashville, Tenn., is Ch. Engr.

Tenn., Harriman.—Louisville & Knoxville Ry. Co., capital \$50,000, is chartered; headquarters to be at Harriman. Proposed line from New River to Petros, Tenn. Incorporators, B. M. Robinson, H. C. Anderson, J. C. Foreman, C. B. Harney and H. E. Carr. Mr. Robinson, whose address is 115 Broadway, New York, is receiver of the Tennessee Ry., whose main line is 37 mi. long from Onelda, Tenn., to Charley Branch, with several short branches, making a total of

54½ mi., including main line, it being so located that it could be made the nucleus for a direct line from Louisville to Knoxville.

Tex., Corpus Christi.—J. H. Caswell of San Diego, Cal., and associates, who are building an electric railroad from Corpus Christi to Ward's Island, 8 mi., have asked franchise in Corpus Christi, and a vote will be taken Aug. 10.

Tex., Corpus Christi.—Corpus Christi Traction Co., capital \$100,000, is chartered. It proposes to build and operate an interurban railway in and out of Corpus Christi north, west and south. Incorporators, J. H. Caswell of San Diego, Cal., who subscribes to \$99,400 of the stock; J. R. Hopkins, W. G. Blake, Orlan P. Metcalf, Gordon Boone and W. E. Pope, all of Corpus Christi, and Arthur McEvoy of New York city.

Tex., San Antonio.—J. O. Terrell of San Antonio, receiver of the Artesian Belt R. R., is quoted saying that the proposed extension to Crowther, on which 15 or 16 mi. have been graded, may be built within 3 or 4 months.

Va., West Point.—York & Rappahannock River Ry. Co., capital \$400,000, will apply for charter to build a line from West Point to Urbanna, Va., about 17 mi.; Prest., R. S. Bristow of Urbanna; V.-Ps., F. H. Sprague of West Point and J. R. Saunders of Saluda; Treas., L. N. Weaver; Secy., W. H. Ryland, both of Urbanna. Other incorporators are B. Upton and C. E. Taylor of Urbanna; E. J. Smith and Claude Neale of Saluda; Crosby Thompson, H. E. Topping,

H. I. Lewis and Edward Bland of West Point, and Thomas Gresham of Richmond. The board of directors also includes R. H. Bruce of Richmond and W. D. Evans of Saluda.

W. Va., Charleston.—Board & Duffield of Charleston have the contract to build the extension of the Charleston Interurban Ry. from Charleston to Montgomery, W. Va., about 25 mi., via Malden, Marmet, Winifrede Junction, Cabin Creek and Coalburg. Construction has begun and 1 mi. of track laid. Expected to finish from Charleston to Cabin Creek, 13½ mi., this year.

W. Va., Fairmont.—Fairmont-Helens Run Ry. Co., capital \$500,000, with headquarters at Baltimore, Md., is chartered to build the proposed mine line of the Western Maryland Ry. from a connection with the Baltimore & Ohio R. R. to coal mines in the Helens Run region, about 6 mi. Incorporators, Carl R. Gray, who is Prest. of the Western Maryland Ry.; M. C. Byers, C. H. Porter, H. R. Pratt, Ch. Engr., and L. F. Timmerman, all Western Maryland officers.

W. Va., Summersville.—George W. Curtin and H. B. Curtin of Curtin, W. Va., are reported interested in building a railroad from Summersville to Charleston, W. Va., 23 mi.

STREET RAILWAYS

Va., Lynchburg.—Lynchburg Traction & Light Co. contemplates double-tracking its line on Main St. J. W. Hancock is Gen. Mgr.

W. Va., Huntington.—The Trubaker Construction Co. has been given the contract to build the 12th Ave. line for the Ohio Valley Electric Rys. Co., of which W. W. Magoon is Gen. Mgr.

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

"WANTS"

Air Compressors.—See Glass Machinery and Materials.—Akro Agate Co.

Automobile Materials, etc.—Tng. E. Macchi, 35 Via Mario Pagano, Milano, Italy. Interested in materials for motor cars, also shop machinery; following are specialties: Highest class nickel and "Cromnickel steel," roller chains for automobiles and transmissions, silent chains for automobiles and modern transmissions, balls and ballbearings, chains, pedals and saddles for bicycles, carburetors for motorcycles; view to representation.

Automobile Supplies.—R. Bailly & Co., 66 Route de Houilles, Bezons, Paris, France. To correspond with manufacturers of specialties and accessories for automobile industry.

Boiler (Log).—Smethport Extract Co., Damascus, Va.—Old-fashioned log boiler.

Boilers.—C. M. C., care Manufacturers Record, Baltimore, Md.—Two 100 H. P. boilers; first-class condition.

Boilers.—See Lathe (Englee), etc.—G. Harry Peacock.

Bridge Construction.—Pitt County Commrs., Brascoe Bell, Clerk, Greenville, N. C.—Bids until Aug. 2 to construct reinforced concrete bridge across Chiled Creek near Grimesland; plans and specifications obtainable from County Clerk for \$2.

Bridge Construction.—City, Ben Campbell, Mayor, Houston, Tex.—Bids opened July 20 to construct 3 reinforced concrete bridges, one on Telephone Rd. and two on Humble St.; specifications and information obtainable from E. E. Sands, City Engr.

Bridge Construction.—Caroline County Commrs., Bowling Green, Va.—Bids until July 30 to construct reinforced concrete bridge 66 ft. long over South River; plans and specifications on file with County Clerk, Bowling Green, and G. P. Coleman, State Highway Commr., Richmond.

Bridge Construction.—Surry County Commrs., J. B. Sparger, Chrmn., Mount Airy, N. C.—Bids July 21 to erect double-span bridge across Fishers River, in Dobson township, and 3 smaller bridges in Pilot township.

Bridge Construction.—Berkeley County Court, E. A. Hobbs, Clerk, Martinsburg, W. Va.—Bids until July 28 to construct reinforced concrete arch bridge over Mill Creek

at Chapman's Ford, 4 mi. east of Bunker Hill, W. Va.; bids on 2 designs; first design calls for structure with 70-ft. span of waterway, 16-ft. roadway and 16-ft. clear rise from bed of stream to arch ring, length of wing walls 8 ft. on south end and 12 ft. on north end, side walls or railings to be of concrete 3 ft. high and 8 in. thick; second design calls for structure with 2 spans of 35 ft. each, 16-ft. roadway and 16-ft. clear rise from bed of stream to arch ring with same length and size of wing walls and side walls; structure to support uniformly distributed moving load of 150 lbs. per sq. ft. or concentrated load of 20-ton road roller; bidders to file with bids the plans and specifications of bridge proposed to be built.

Bronze Forgings, etc.—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until Aug. 3 for delivering bronze and steel forgings at naval torpedo station, Newport, R. I. Apply for proposals to navy pay office, Newport, or to Bureau.

Bucket (Drag Line).—G. R. Strickler, Prest. Southern Sand & Gravel Co., Fredericksburg, Va.—Drag-line bucket (new) of 3 cu. yds. capacity; for use on Lidgetwood-Crawford class E excavator. Send full information, specifications and prices.

Bridge Plans.—Frederick H. Christensen Beaufort, S. C.—Correspondence with engineers relative to preliminary survey, location and type of bridge, preparation of plans and supervision of bridge construction; \$80,000 available.

Building Materials.—F. M. Blount Construction Co., Pensacola, Fla.—Prices on steel, metal sash, cement and lime.

Building Material.—Rev. Jas. R. Postlethwait, 747 Elm Ave., Maplewood, Mo., Sta. St. Louis.—Prices on lumber, brick, electric wiring and fixtures, millwork, guttering, steam-heating plant, folding doors, pews, etc., for \$15,000 church.

Canal Excavation.—U. S. Reclamation Service, Malta, Montana.—Bids until Aug. 12 for about 355,000 cu. yds. canal excavation; location 3 to 10 mi. from Saco, Montana, on Great Northern Ry. For details address U. S. Reclamation Service, Washington, D. C.; Denver, Colo., or Malta, Montana; Morris Rien, Acting Director, U. S. Reclamation Service, Dept. of Interior, Washington.

Canals (Reclamation), etc.—U. S. Reclamation Service, St. Ignatius, Montana.

3 stories and basement; 2 stores and 11 apartments; 48,312 ft.; structural work largely steel; exterior of sand-faced red brick; cast stone window-sills, lintels, belt courses and ornamental panels; art glass marquise; metal cornices; electric lights; steam heat separate, not let; cost \$25,000; Kepner & Smith, Architects, Frederick. (Previously noted.)

Miss., Greenville.—Strickland Lumber Co., Greenville, has contract to remodel front of store building for Star Shoe Store; pressed brick, steel and plate glass.

Miss., Laurel.—Abraham Dennis let contract to W. M. Morris to erect 3-story business block.

Mo., St. Louis.—I. Rosen let contract to Theo. Degenhardt, St. Louis, to erect addition to store and dwelling at 2738 Chippewa St.; cost \$2900.

S. C., Anderson.—W. Frank McGee let contract to erect store and warehouse; 28x100 ft.; pressed brick, plate-glass and metal front; marble base; prismatic glass above plate glass; Casey & Fant, Architects, Anderson.

S. C., Greer.—T. E. Smith let contract to J. C. Cunningham, Greer, to erect store on Trade St.; 40x100 ft.; ordinary construction; gravel roof; wood floor; cost \$10,000; S. P. Tinsley, Architect, Spartanburg, S. C. (Lately noted.)

S. C., Iva.—W. Frank McGee let contract to erect store and warehouse building. (See Warehouses.)

Tenn., Memphis.—Joe Bloomfield, Memphis, has contract to remodel building and install show windows at 156 S. Main St., occupied by Ronebaum & Mendel; cost \$7500.

Tex., San Antonio.—Hansen-Jorhensen estate let contract to J. C. Dielman, 306 E. Commerce St., San Antonio, to erect store and rooming-house building at 232 E. Commerce St.; 62x46 ft.; fireproof; 4-ply Barrett specification roof; first floor cement; wood floors above; bar-lock vault lights; cost \$16,000; Leo M. J. Diemann, Architect, 306 E. Commerce St., San Antonio. Address Architect. (Lately noted.)

Tex., Wichita Falls.—C. W. Bean let contract to Henry Amman, to remodel store on 8th St. between Ohio and Indiana Sts., occupied by Baum & Gradner; ordinary construction; cost \$10,000; Field & Clarkson, Architects, Fort Worth and Wichita Falls. Address Architects. (Lately noted.)

Va., Danville.—Leon A. Francisco let contract to H. T. Pearson, 103 S. Main St., Danville, to erect building on Main St. between Elk Bldg. and Morgan Hotel for store, office and hall; 3 stories, 11 offices, hall 2x53 ft.; 63x83 ft.; ordinary construction; slag roof; subfloor overlaid with T. & G. flooring, about \$300; steam heat, \$300; cost \$16,000; plans by Contr. Address Contr.

THEATERS

Fla., Lakeland.—A. B. Kibler let contract to erect air dome; fireproof; 50x125 ft.; white brick front.

Md., Baltimore.—Lord Calvert Theaters Co. let contract to Monmonier & Sorrell, 1711 McCulloh St., Baltimore, to erect motion-picture theater at Baker St. and Fulton Ave.; 36.6x142.6 ft.; fireproof; Master cement floor; cost about \$12,000; F. E. Torney, Architect, 813 Newington Ave., Baltimore. (Lately noted.)

WAREHOUSES

Ga., Dalton.—Crown Cotton Mills let contract to Gallivan Building Co., Greenville, S. C., to erect 3 warehouses; plans by Park A. Dalila Co., Atlanta.

S. C., Anderson.—W. Frank McGee let contract to erect store and warehouse. (See Stores.)

S. C., Columbia.—Standard Warehouse Co. let contract to General Fire Extinguisher Co., Providence, R. I., to install automatic sprinkler system in warehouse No. 2, recently reported burned; cost \$3700.

S. C., Iva.—W. Frank McGee let contract to erect warehouse and store building to replace burned structure; 29x100 ft.; ordinary construction; Barrett specification roof; cement floor; acetylene light; cost \$5000; Casey & Fant, Architects, Anderson, S. C.

Tenn., Johnson City.—M. I. & L. D. Gump let contract to Curtis Bros., Johnson City, to erect warehouse; 2 stories and basement; 100x100 ft.; mill construction; Barrett specification roof; wood floors; 30,000 sq. ft. floor space; cost \$15,000; C. G. Mitchell, Architect, Johnson City; completion by November; will be occupied by Hickey-McCorkle Co.

Bids until Aug. 18 to construct laterals, sub-laterals and appurtenant structures on Flat-head Project; about 33,900 cu. yds. excavation, 560 cu. yds. concrete, 3500 sq. yds. paving, placing about 33,500 lbs. reinforcing steel and 74,000 ft. B. M. of lumber and the manufacture and laying of about 1000 lin. ft. concrete pipe; location, east side of Flat-head River, 10 to 18 mi. southwest of Polson and 9 to 16 mi. northwest of Ronan, Mont. For details address U. S. Reclamation Service, Washington, D. C.; Denver, Col., or St. Ignace; A. P. Davis, Ch. Engr., Dept. of Interior, U. S. Reclamation Service, Washington.

Canning Machinery.—C. D. Puckett, Brundage, Tex.—Prices on equipment for cannery.

Cars (Dump).—C. M. C., care Manufacturers Record, Baltimore, Md.—30 side-dump 4-yd. cars; first class condition.

Cars.—Pennsylvania Equipment Co., 503 Coleman Bldg., Philadelphia, Pa.—12 to 15 standard-gauge rocker dump cars, 10 or more cu. yds. capacity.

Cars (Freight), etc.—G. Harry Peacock, Lock Box 55, Selma, Ala.—Six second-hand freight flat cars, standard gauge, 15 to 20 tons capacity, with automatic couplers, and quote same with plain couplers; cars about 30 ft. long; also 15 freight flat car bodies for 36-in.-gauge track and 36-in.-gauge trucks; delivered New York City.

Castings (Drop Forge).—Municipal Excavator Co., 301 Carolina St., San Antonio, Tex.—To contract for its supply of drop forge castings.

Cement (Portland).—Geo. H. Rommel Co., 639 S. Campbell St., Louisville, Ky.—Portland cement for \$150,000 Y. W. C. A. building.

Cartons.—See Glass Machinery and Materials.—Akro Agate Co.

Chains.—See Automobile Materials, etc.—Tug E. Macchi.

Chemical Products.—See Pharmaceutical Preparations, etc.—Comisiones Y Representaciones.

Cement Roofing Tile.—Panama Canal, F. C. Boggs, Gen. Purchasing Officer, Washington, D. C.—Bids until Aug. 3 to furnish, or furnish and erect cement roofing tile; blanks and general information relating to this circular (No. 954) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans; and Fort Mason, San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

Cotton Cloth.—Faillace Hermanos, Apartado No. 66, Barranquilla, Spain.—To correspond with manufacturers of Palm Beach cloth.

Crane (Locomotive).—P. O. Box 516, Norfolk, Va.—One standard gauge locomotive crane, 45 to 50-ft. boom, capable of handling one-yard clam-shell bucket; guaranteed condition; state make, point of inspection and lowest price.

Crane.—Sewerage and Water Board, F. S. Shields, Secy., 5th floor, City Hall Annex, New Orleans, La.—Bids until Aug. 3 to furnish and erect 15-ton traveling crane in Drainage Pumping Station No. 2; specifications and blank proposal forms obtainable from Board.

Culverts (Corrugated Iron).—Alamo Construction Co., San Antonio, Tex.—Prices on 63 corrugated iron culverts. (See Road Machinery, etc.)

Directories (Wall) for Office Buildings.—Sky V. Straley, Princeton, W. Va.—Addresses of suppliers of wall directories, such as installed in vestibules of office buildings.

Ditching Machinery.—C. M. Steinmetz, Engr., Box 1333, Washington, D. C.—Catalogues and prices from manufacturers of ditching machines.

Drainage.—Drainage Comms., Second and Beaver Dam Creeks, Rowan County, Salisbury, N. C.—Bids July 31 to remove about 250,000 yds. material to drain said creeks; plans and specifications at Clerk's office, Salisbury; C. M. Miller, Salisbury, Engr.

Drainage.—Big Creek Drainage Dist., C. S. Cullens, Clerk, New Albany, Miss.—Will let contract Aug. 9 to construct canal; about 276,822 cu. yds. excavation.

Drainage Machinery.—J. M. Johnson, Ch. Engr., Marion, S. C.—Interested (for

Catfish Drainage Dist.) in types and prices of machinery for draining about 40 mi. (4) canals, 14 to 45 ft. bottom, 6 to 9 ft. depth; canals through timbered swamps.

Dredging.—City, Ben Campbell, Mayor, Houston, Tex.—Bids until July 23 to dredge 200,000 yds. of material on north and west sides of Houston Turning Basin; specifications and information obtainable from E. E. Sands, City Engr.

Earthwork.—Comms. Burleson County Improvement Dist. No. 1, R. S. Newsom, Chrmn., Caldwell, Tex.—Bids until July 31 to construct about 300,000 cu. yds. earthwork in levees and small amount in drain ditches; plans and specifications on file in offices County Clerk at Caldwell and John K. Parker at Bryan, and may be obtained from J. C. Nagle, Engr., Austin, for \$5.

Electric Plant (Water-power).—Edw. L. Williams, 10 N. Liberty St., Cumberland, Md.—To correspond with 3 or 4 engineers regarding construction of hydro-electric plant.

Electrical Equipment, etc.—Board of Trustees, Seguin Electric Light & Power Co., Owen A. Gafford, Mgr., Seguin, Tex.—Bids until Aug. 10 for mechanical and electrical equipment, consisting of water wheels, transmission machinery, generator and switchboards; proposals for mechanical and electrical equipment considered separately and collectively, collective proposals preferred; plans and specifications at office or mailed on request for \$10.

Electrical Supplies.—C. J. Brassel, Lakeland, Fla.—Net prices to dealers, with bulletins, of private electric light plant switchboards for charging storage batteries for 32-volt and 110-volt systems.

Electric Wiring.—See Building Material.—Rev. Jas. R. Postlethwait.

Elevators, etc.—Panama Canal, F. C. Boggs, Gen. Purchasing Officer, Washington, D. C.—Bids until Aug. 6 to furnish electrically-operated passenger elevator and dumbwaiter, and hand-operated freight elevators, boiler tubes, steam cocks, portable tool stands and lathe pans, cold-rolled steel, tool steel, steel cable, valves, brass floor drains, air hose, magnesia pipe covering, paper, Bristol board, memorandum books, Douglas fir and yellow pine lumber, spud timbers and white oak lumber; blanks and general information relating to this circular (No. 955) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and Fort Mason, San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

Elevator.—Board of Comms., Galveston, Tex.—Bids until July 29 to furnish and install electric passenger elevator in municipal building; plans and specifications by C. D. Hill & Co., Architects, and are on file with John D. Kelley, City Secy.

Engines.—Snethport Extract Co., Damascus, Va.—300 and 100 H. P. large bore and long stroke slide valve engine.

Engines.—See Lathe (Engine), etc.—G. Harry Peacock.

Engineer (Bridge).—See Bridge Plans, Frederick H. Christensen.

Flooring (Maple).—Geo. H. Rommel, 639 S. Campbell St., Louisville, Ky.—13-16x24-in. clear maple flooring for \$150,000 Y. W. C. A. building.

Fountains.—H. L. Gaver, Frederick, Md. Names and addresses of manufacturers of fountains suitable for private residence.

Furniture (Church).—J. H. Smith, 911 5th Ave., Columbus, Ga.—Prices on church furniture for \$15,000 to \$20,000 church.

Furniture (Metal), etc.—Hernando County Comms., H. D. Evans, Chrmn., Brooksville, Fla.—Bids Aug. 2 on courtroom metal furniture and metal furnishings for vault; specifications obtainable from W. A. Edwards, Archt., 632 Candler Bldg., Atlanta, Ga.

Glass Machinery and Materials.—Akro Agate Co., P. O. Box 246, Clarksburg, W. Va.—Glass-making material; pots; fire-brick; clay; 4x5-in. double-action air compressor and tank for operating 8 pneumatic glass shears on 8 machines; air compressing equipment, 25 lbs. constant pressure, to be driven by gas engine; company has in position; paper boxes, corrugated paper boxes, etc., for packing toy marbles, glass balls, etc.

Glasses (Jelly).—O. C. Benbow, Manatee, Fla.—Small fancy glasses for guava jelly; about 1/2 ordinary size.

Glove Machinery and Supplies.—Longview Mattress Co., Longview, Tex.—Names and addresses of manufacturers of machinery for cutting canvas gloves and of leather palms for canvas gloves.

Grain Cleaning and Grading Machinery.—Sherwood Atkinson, Madison, Ga.—Data and prices on grain grader and recleaner.

Grain Elevators.—H. E. L. McCollum, Secy., Board of Trade, Newport, Ark.—Prices on grain elevator machinery and correspondence with contractors who install grain elevators.

Grinding and Corrugating Machinery.—Georgia Machinery Co., engineer and machinist, 13 Peters St., Atlanta, Ga.—Data and prices on machinery for grinding and corrugating flour mill rolls.

Hardware, etc.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids until July 27 on rubber ferrules, glycerine, hardware, etc., and rubber pump valves; delivery Norfolk. Apply for proposals, navy pay office, Norfolk, or to Bureau.

Heating Plant (Steam).—See Building Material.—Rev. Jas. R. Postlethwait.

Heating (Steam).—J. H. Smith, 911 5th Ave., Columbus, Ga.—Prices on steam-heating apparatus for \$15,000 to \$20,000 church.

Heating System.—Paul M. Egan, Charleston-Kanawha, W. Va.—Data on heating system for \$10,000 school; probably hot-air furnace.

Ice Machinery.—Morgan & Little, Piedmont, Ala.—Prices on equipment for ice plant.

Ice Machinery.—M. de Cardenas & Co., P. O. Box 893, Havana, Cuba.—Names and addresses of manufacturers of refrigerators with ice machines attached; for hotels and cafes.

Ice and Refrigerating Machinery.—National Fish, Game, Produce & Ice Co., 417 Audubon Bldg., New Orleans, La.—Open bids Sept. 1 for complete equipment ice and refrigerating machinery; cost about \$150,000; two plants; capacity about 1750 tons. Address Ralph W. Lees, Engr., Natchez, Miss.

Ice Plants.—M. C. Price, Burlington, N. C.—Prices on 10 to 30-ton ice manufacturing plants complete; also data on cost of operating, etc.

Lathe (Engine), etc.—G. Harry Peacock, Selma, Ala.—Engine lathe—20 to 24-in. swing, 10 or 12 ft. between centers; 23 or 24-in. drill press; small iron shaper; 2-saw trimmer to cut 18 to 20 ft. long; 15 to 20 horizontal or upright, portable or semi-portable, no-wheels engine and boiler (steam engine and boiler) suitable for steam laundry; 50 H. P. steam engine and 60 H. P. horizontal tubular boiler; sawmill to match and small planer; all second-hand, good condition.

Lathes, etc.—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until Aug. 3 for delivering turret lathe and flanged safety valves at Navy-yard, Norfolk. Apply for proposals to navy pay office, Norfolk, or to Bureau.

Lighting Plants.—Chas. E. Selby, 12a Vickery's Chambers, 76 Pitt St., Sydney, Australia.—Correspondence with manufacturers of house and shop lighting plants; view to representation.

Lighting (Electric).—J. H. Smith, 911 5th Ave., Columbus, Ga.—Prices on electric-lighting fixtures for \$15,000 to \$20,000 church.

Lime Machinery.—Pineola Lime Co., J. F. Ange, Mgr., Orlando, Fla.—Lime machinery.

Locomotives.—C. M. C., care Manufacturers Record, Baltimore, Md.—Three 15-ton dinky engines; 36-in. gauge; first-class condition.

Lumber.—See Elevators, etc.—Panama Canal.

Machine Tools.—See Lathe (Engine), etc.—G. Harry Peacock.

Machine Tools, etc.—Ameri-Can Sealing & Mfg. Co., Jos. M. Frederick, Mgr., 708 American Bldg., Baltimore, Md.—Bids about Aug. 10 for engine lathes, shapers, mills, grinders, drill presses, power presses, etc.

Machinery and Tools.—See Metals, etc.—Carlos Yensen.

Matches.—Bensussan, Sides & Co., Salonique, Greece.—Prices on matches with samples; view to representation.

Matches (Paraffine).—Office Colonial de Representation Commerciale, Francois Raillon, Director-Gen., Pointe-a-Pitre, Guade-

loupe.—Correspondence with manufacturers of paraffine matches; view to representation.

Metal Ceiling.—See Roofing and Ceiling (Metal).—Jos. L. Pearson.

Metal-working Machinery (Corrugating).—See Grinding and Corrugating Machinery.—Georgia Machinery Co.

Metals (Nickel and Nickel-Steel).—See Automobile Materials, etc.—Tug E. Macchi.

Metal-working Machinery.—See Nail Machinery.—Birnbau & Co.

Metals, etc.—Carlos Yensen, Grubbeg 1, Kristiania, Norway.—Interested (view to representation) in machinery and tools, metals and alloys, iron and steel in bars and profiled sections, forgings, tubes and fittings, wrought and malleable iron, black and galvanized sheets, plain and corrugated cast-iron pipes flanged, socket and spigot, casted vertically and with rill in the socket for mains water conduits, and lighter for gas and liquids of lower pressures, valves, etc.; further copper, tin, lead, aluminum in ingots, bars, tubes for every purpose, and sheets.

Mixer (Concrete Paving).—See Road Machinery.—H. E. Rhodes.

Moss Mattress Equipment, etc.—Chas. A. Badeaux, Thibodaux, La.—Data on moss mattress manufacture, including cost of machinery, markets, etc.

Motor Trucks.—Andrews Lumber Co., Opelika, Ala.—Second-hand motor trucks for retail lumber, sash and door plant.

Motor Trucks, etc.—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until Aug. 3 for delivering rubber boots, fire brick, deck clocks, spyglasses, monel metal, steel castings, forgings and springs, light-weight motor truck, brass tubing, gate and globe valves at Navy yard, Washington, etc. Apply for proposals to Bureau.

Nail Machinery.—Birnbau & Co., 121 Newington Causeway, London, S. E., England.—Automatic machines for manufacturing nails and for manufacturing screw hooks.

Organ (Pipe).—J. H. Smith, 911 5th Ave., Columbus, Ga.—Prices on pipe organ for \$15,000 to \$20,000 church.

Paving.—A. M. Clarke, Clerk, Southern Pines, N. C.—Bids until Aug. 2 to construct 1000 to 1500 sq. yds. granolithic sidewalk; specifications on file with Clerk, Citizens' Bldg.

Paving.—O. B. Bonar, City Clerk, Moundsville, W. Va.—Bids until July 26 to construct cement curb on north side of 5th St. from Washington to Grant Ave., and pave 5th St. from Jefferson to Grant Ave. with vitrified brick, cement, tarva or warrenite paving; instructions to bidders, specifications, etc., obtainable from City Engr., Alex. Purdy.

Paving.—Board Comms., McKinney, Tex.—Bids until July 29 for construction street improvements, Dist. No. 3; includes 15,000 ft. combined curb and gutter, 23,000 sq. yds. asphaltic concrete pavement, 6000 sq. yds. brick pavement, etc.; plans obtainable from Chas. Schultz, City Engr.

Paving.—Baltimore (Md.) Board of Awards, City Hall.—Bids until July 28 to grade, curb and pave with sheet asphalt and granite block, all on concrete base, following streets under contract No. 121: Hillen St., from Fallway to Ensor St.; East St., from Fayette St. to Low St.; Gold St., from Calhoun St. to Druid Hill Ave.; sheet asphalt, 13,580 sq. yds.; granite block, 3120 sq. yds.; vitrified brick, 1940 sq. yds.; specifications and proposal sheets obtainable from Paving Com., City Hall; plans and profiles on file with R. Keith Compton, Chrmn. and Const. Engr. Paving Com.

Paving.—Town of Broad Oaks, P. O. Clarksburg, W. Va.—Opens bids Aug. 2 to construct 15,000 sq. yds. paving; Engr., C. A. Osborn, Clarksburg.

Paving.—City Comms., Huntington, W. Va.—Bids until July 28 to grade, curb and pave with No. 1 vitrified brick portions of Walnut and 7th Sts., 12th and 10th Aves. and two alleys; details, plans, specifications, etc., on file with City Engr.; O. H. Wells, Commr. of Streets, Sewers, etc.

Paving.—Board of Council, Winchester, Ky.—Bids until Aug. 6 to construct about 13,000 sq. yds. sheet asphalt paving; plans and specifications on file with City Engr.; S. B. Tracy, City Clerk.

Peanut Machinery, etc.—W. B. Pickard, M.D., Vendome Bldg., 611 Church St., Nashville, Tenn.—Machinery to manufacture food product, including machine to grind parched wheat and rice, etc.; manufacture peanuts—hullers, grinders, dryers, etc.

Pharmaceutical Preparations, etc.—Comisioneros Y Representaciones, Jacinto Murry Serra, Malorca 241, Barcelona, Spain. Correspondence (view to representation) with manufacturers of chemical products and crude materials, pharmaceutical preparations, proprietary pharmaceutical products, perfumery and hygienic and sanitary goods.

Piping.—Cotulla Oil Co., P. O. Box 963, Austin, Tex.—Probably casing for oil wells.

Piping.—Port Comms., Ernest M. Loeb, Prest., Suite 200, New Orleans Court Bldg., New Orleans, La.—Bids until July 23 to install complete system of steam exhaust and feed water piping and steam auxiliaries for cotton warehouses and terminal now under construction on east bank Mississippi River between Valence and Soniat Sts.; plans and specifications on file with Ford, Bacon & Davis, Engrs., 921 Canal St., New Orleans, by whom full sets will be furnished for \$25.

Piping, etc.—Baltimore (Md.) Board of Awards, City Hall.—Bids until July 28 to furnish vitrified sewer pipe, materials contract No. 13, and sand and gravel, materials contract No. 12; contract No. 13, 26,000 lin. ft. 6-in. to 15-in. pipe, 3-ft.; 10,000 lin. ft. 5-in. to 15-in. pipe, 2-ft.; 2000 Y branches, 1500 leads; contract No. 12, bank sand, 1000 cu. yds.; washed sand, 500 cu. yds.; gravel, 500 cu. yds.; specifications obtainable from Sewerage Com., 304 American Bldg.; Chas. Englund, Chron. Sewerage Com.

Plows (Gang).—C. M. Steinmetz, Engr., Box 1333, Washington, D. C.—Catalogues and prices from manufacturers of gang plow machines.

Press (Drill).—See Lathe (Engine), etc. G. Harry Peacock.

Pumping Plant and Concrete Sluiceway.—Board of Supervisors, Fabius River Drainage Dist., Quincy, Ill.—Bids until Aug. 4 (postponed date) at office John H. Best, Illinois State Bank of Quincy, for steam-driven pumping plant, containing two 42-in. centrifugal pumps with normal capacity of 8,000 gals. per min. each against maximum static pumping head of 15 ft.; will receive alternative bids, at same time and place, on oil-engine-driven plant and electrically-driven plant of same capacity and type of construction; also bids on reinforced concrete sluiceway; further information with Harman Engineering Co., Peoria, Ill.

Punch.—Montgomery Coal Washing & Mfg. Co., 34 Ave. and 12th St., Birmingham, Ala.—Single-end punch; 36-in. or 42-in. throat, motor-driven, to punch 6-in. holes in 3/4-in. plate; machine may be equipped for shearing plates; consider second hand, good condition.

Rails.—C. M. C., care Manufacturers Record, Baltimore, Md.—50 tons relaying 40-lb. rails; first-class condition.

Reclamation Work.—See Canals (Reclamation), etc.—U. S. Reclamation Service.

Refrigerators.—See Ice Machinery.—M. de Cardenas.

Road Construction.—Whitley County Fiscal Court, Williamsburg, Ky.—Bids until July 21 to improve road from Williamsburg to Corbin; plans and specifications on file with County Road Engr.; E. F. White, County Clerk.

Road Construction.—Knox County Good Roads Com., Room 307, Holston National Bank Bldg., Knoxville, Tenn.—Bids until July 28 to construct 88.11 mi. roads; plans and specifications on file with Goods Roads Com.

Road Construction.—Humphreys County Comms., Jas. T. Anderson, Chron., Waycross, Tenn.—Will let contract July 24 on road construction; \$250,000 available; plans and specifications obtainable from G. B. Howard & Co., Nashville, Tenn.

Road Construction.—Bell County Fiscal Court, Pineville, Ky.—Bids until July 24 to improve road from Washtoto to Calvin; plans on file with Culton & Bailey, Pineville; W. C. Bingham, County Clerk.

Road Construction.—Osceola County Comms., Kissimmee, Fla.—Bids until Aug. 2 on about 3 mi. vitrified brick road, 9 ft. wide, with concrete curbing; specifications obtainable from J. L. Overstreet, Clerk Circuit Court.

Road Machinery.—H. E. Rhodes, Stuttgart, Ark.—Prices on street paving mixer, 11 to 15 cu. ft. capacity, with boom and bucket distributor; also 10-ton roller.

Road Machinery.—C. M. Steinmetz, Engr., Box 4233, Washington, D. C.—Catalogues and prices from manufacturers of road machinery.

Road Machinery, etc.—Alamo Construction Co., San Antonio, Tex.—Prices on

6-ton road roller and tractor combined; 6 H. P. grader; 2 road plows; five 5-ft. Fresno; 20 24-in., 20 30-in. and 22 36-in. corrugated iron culverts 20 ft. long and one 48-in. 30 ft. long.

Roasting and Grinding Machinery.—See Peanut Machinery, etc.

Roofing (Galvanized).—C. M. C., care Manufacturers Record, Baltimore, Md.—15,000 sq. ft. corrugated galvanized roofing.

Roofing and Ceiling (Metal).—Jos. L. Pearson, Keysville, Va.—Metal roofing (metal shingles and 5 V. galvanized); also steel ceiling and roofing tin.

Sand and Gravel.—See Piping, etc.—Baltimore (Md.) Board of Awards.

Sash (Metal).—See Building Materials. F. F. Blount Construction Co.

Sawmill.—G. Harry Peacock, Selma, Ala. Second-hand sawmill and small planer. (See Lathe (Engine), etc.—G. Harry Peacock.)

Scales, etc.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids until July 27 on pump leather, garnet paper, platform folding scales and coal tar; delivery Charleston, S. C. Apply for proposals, navy pay office, Charleston, or to Bureau.

Screw Hook Machinery.—See Nail Machinery.—Birnbaum & Co.

Shoes (Canvas).—Faillace Hermanos, Apartado No. 66, Barranquilla, Spain.—To correspond with manufacturers of white canvas shoes for men.

Shoe Machinery and Materials.—W. J. Davis, Owensville, Mo.—Prices on shoe machinery and materials.

Seating.—See Building Material.—Rev. Jas. R. Postelwalt.

Sewer Construction.—Baltimore (Md.) Board of Awards, City Hall.—Bids until July 28 to construct lateral sewers and house connections in Dist. No. 45, contract No. 158; 43,000 lin. ft. 8 to 12 in. sewers and 37,000 lin. ft. house connections; plans on file with Ch. Engr. of Sewerage Com.; specifications and plans obtainable from Harry W. Rodgers, Secy. Sewerage Com., 304 American Bldg.; charge of \$5 for each set of specifications and plans.

Stone (Kentucky Blue).—J. M. Harby, Sumter, S. C.—Names of firms that can supply Kentucky bluestone for construction purposes.

Steel Forgings.—See Bronze Forgings, etc.—Bureau Supplies and Accounts.

Sulphate of Alumina.—Gerhard & Hey, 21 State St., New York.—Interested in sulphate of alumina (raw material for paper manufacturers) for consumption in Holland; wants addresses of manufacturers.

Swimming Pool Plans.—M. T. Clark, 10 N. Liberty St., Cumberland, Md.—Correspondence with architect relative to plans for swimming pool in amusement park; cost of pool and building about \$7000.

Tank (Septic).—See Water-works and Septic Tank.—Board County Comms., Clearwater, Fla.

Tank and Tower.—Peacock's Iron Works, Selma, Ala.—New 2000-gal. galvanized iron tank on steel tower, 20 ft. high; tank to have cover.

Tanks.—City, Ben Campbell, Mayor, Houston, Tex.—Bids opened July 23 to construct 1 or 2 elevated steel tanks at Houston Turning Basin; specifications and information on application to E. E. Sands, City Engr.

Tractor.—See Road Machinery, etc.—Alamo Construction Co.

Truck (Fire, Motor).—Commissioners, Clarksdale, Miss.—Bids Aug. 3 on triple combination motor pumping engine, f. o. b. Clarksdale. For information address John Donohue, Fire Chief.

Valves.—Baltimore (Md.) Board of Awards, City Hall.—Bids until July 23 to furnish valves to Water Dept.; specifications and proposal forms obtainable from Robt. L. Clemmitt, Acting Water Engr., City Hall; charge of \$5 for each set of specifications.

Valves.—See Lathes, etc.

Vault Furnishings.—See Furniture (Metal), etc.—Hernando County Comms., Brooksville, Fla.

Water-works and Septic Tank.—Pinellas County Comms., Clearwater, Fla.—Bids Aug. 3 for materials and installation water-works plant and plumbing, including sanitary system and small septic tank for convict camp; Clements McMullen, County Highway Engr., Largo, Fla.

Well Drilling.—S. Heinemann, 416 Front St., Newport, Ark.—Names and addresses of firms to drill for oil.

Well Drilling.—J. C. King, care Southwestern State Hospital, Marion, Va.—Cor-

respondence, view to placing contract to drill deep well for water supply; location Radford, Va.

Wharf Construction, Excavation, etc.—City of Houston, Tex.—Opens bids July 23 to construct wharf and cotton sheds and about 100,000 yds. dry excavation for same; E. E. Sands, City Engr.

Wharf Construction.—Port Comms., Suite 200, New Orleans Court Bldg., New Orleans, La.—Bids until Aug. 11 to rebuild Julia St. wharf and erect extension to Girod St. wharf; material to be furnished by Board; plans, specifications, proposal forms, etc., on file with J. Devereux O'Reilly, Engr., Suite 200, New Orleans Court Bldg., by whom full sets will be furnished for \$10.

Undercurrents in American Politics. By Arthur Twining Hadley, Ph.D., LL.D. Publisher, Yale University Press, New Haven, Conn. Price \$1.35.

In the spring of last year President Hadley of Yale University delivered the Barbour-Page lectures at the University of Virginia and the Ford lectures at Oxford University. They are now published in one volume, as they dealt with kindred subjects. To students of politics the book will be welcome, as it will be to any others who desire information concerning the practical working of our institutions. The Virginia lectures show how matters left to Government have often been managed by agencies different from those which the framers of the Constitution had in mind, and the Oxford lectures, relating to property and democracy, show how many organized activities have been kept outside of Government control. Their publication in book form constitutes a contribution to literature which may be read with considerable profit by all thinking men. The volume is printed on heavy paper with uncut edges and gilt top. It is bound in blue cloth.

FINANCIAL NEWS

The MANUFACTURERS RECORD invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

FINANCIAL CORPORATIONS

Ala., Birmingham.—Jefferson County Bank, 2025 2d Ave., is chartered and inceptd.; capital \$500,000; organizers, A. E. Jackson, T. M. Jones, Forney Johnston, R. H. Baugh and J. H. Loveman. Business is to begin Aug. 2.

Ala., LaPine.—The First National Bank is approved; capital \$25,000; organizers, W. L. Grissette, Prest.; L. A. Killough, V.-P.; W. T. Webster, Cash.; W. H. Stoddard, Atty.

Ala., Montgomery.—American Mortgage & Securities Co. is inceptd. with authorized capital of \$100,000. Judge C. B. Tensley is Prest., W. T. Seibels V.-P., and S. H. Cochran, Secy. and Treas.

Ark., Mountain View.—The Stone County and the Farmers' banks, it is reported, are to be consolidated. Savage Mabry is Prest. Farmers' Bank.

Fla., Zephyrhills.—The American State Bank and the First State Bank have been merged under the name of the former institution. J. M. Harvey of Tampa is Prest.

Ga., Atlanta.—Southern Loan Co. has filed application for charter. Incorporators: Bigby Parrott, H. S. Bigby and H. J. Fields.

Ky., Louisville.—Glenn Fire Insurance Co., capital \$200,000, is inceptd. by J. P. Glenn, Samuel O. Wilkes, James K. Jarvis and J. H. Wilkes.

Ky., Maysville.—State Trust Co., capital \$20,000, is incorporated by Charles D. Pearce, E. T. Kirk, Horatio Picklin, James N. Kirk, John M. Hunt, W. H. Rees and E. A. Robinson.

Ky., Murray.—A new national bank is being organized with \$25,000 capital, business to begin about Sept. 1. T. H. Stokes is interested.

Ky., Whitesburg.—Union Bank of Whitesburg has consolidated with the First National Bank of Whitesburg; capital of lat-

ter bank is to be increased to \$35,000. John D. Fitzpatrick is Prest. and W. H. Courtney Cash.

Md., Baltimore.—The Munsey Trust Co. has decided to change its name to the Equitable Trust Co.

S. C., York.—The York Trust Co., capital \$25,000, which is to begin business about Aug. 1, has elected the following officers: O. E. Wilkins, Prest., and R. C. Allein, Secy. and Treas.

Tenn., Nashville.—The Tennessee-Hermitage National Bank will have \$300,000 capital. E. A. Lindsay is Prest. and J. L. Campbell Cash.

Tex., Kaufman.—Farmers and Merchants' National Bank chartered; capital \$75,000; Wood Nash, Prest.; Weston Morrow and Mack Watson, V.-Ps.; Geo. W. Smith, Cash. Business is to begin in about 30 days.

Tex., Mertens.—Farmers & Merchants' Bank, capital \$10,000, began business July 1. R. O. Hooks and T. L. Logan organizers.

Tex., Roby.—A new State bank is reported being organized with O. C. Walker, Cash.

W. Va., Ripley.—First National Bank of Ripley, which succeeds the Valley Bank of Ripley, will begin business in about sixty days. R. P. Shinn is Prest. and W. W. Riley Cash.

NEW SECURITIES

Ala., Anniston.—Election is to be held Sept. 13 to vote on \$20,000 5 per cent. 20-year school bonds; denomination \$300. J. L. Winkle is Mayor.

Ala., Birmingham.—\$1,250,000 5 per cent. 20-year funding and municipal bonds have been purchased at 109.75 by Kountze Bros., New York; Mercantile Trust & Deposit Co., Baltimore, and Otto Marx & Co., Birmingham, Ala.

Ala., Girard.—Election is to be held Aug. 9 to vote on \$25,000 of bonds, \$10,000 being for floating indebtedness and \$15,000 for schools. Address Mayor Morgan.

Ark., Crawfordville.—\$250,000 6 per cent. 5-25-year bonds Crittenden county Drainage Dist. No. 3 have been purchased by Wm. R. Compton & Co., St. Louis.

Ark., Malvern.—\$50,000 water and sewer bonds will probably be issued. Address The Mayor.

Ark., Pine Bluff.—\$40,000 6 per cent. 25-year bonds Drainage Dist. No. 5, Jefferson county, have been purchased by Thos. R. Ashcroft of the Bank of Altheimer, at Altheimer, Ark.

Ark., Russellville.—\$150,000 6 per cent. 20-year Harrison Run divide highway, Pope county, bonds have been purchased by Gunter & Sawyer, Little Rock.

Fla., Clearwater.—Election is to be held in Pinellas county Aug. 18 to vote on \$715,000 5 per cent. 15-30-year bonds for roads, bridges, culverts, etc. C. W. Wiecking is Clerk of Board County Comms.

Fla., Daytona.—Election is to be held Aug. 10 to vote on \$75,000 6 per cent. 20-year school bonds. Address Secy. Board of Public Instruction, Volusia county.

Fla., Deland.—\$350,000 Deland Dist., Volusia county, Special Road and Bridge Dist. road bonds are voted. Address County Commissioners, Saml. D. Jordan, Clerk.

Fla., Eustis.—Election is to be called within 30 days to vote on \$40,000 street and \$30,000 sewer bonds. Address The Mayor.

Fla., Ft. Myers.—Bids will be received until 2 P. M. Aug. 2 by H. A. Hendry, Clerk Board of Comms. Lee County, for \$177,500 6 per cent. road and bridge bonds.

Fla., Jacksonville.—Election is to be held Sept. 22 to vote on \$250,000 sewer and drainage bonds. Address The Mayor.

Fla., Miami.—Bids will be received until 5 P. M. Aug. 12 by S. A. Belcher, Clerk Dade County, for \$100,000 5 per cent. 15-year road and bridge bonds Dist. No. 1, Dade county, bonds.

Fla., Miami.—Election July 17 to vote on \$25,000 6 per cent. bonds Dade County Special Tax School Dist. No. 7 (Silver Palm). Address Board of Education. (This item was erroneously reported last week under date of Tampa. A later report says the bonds carried.)

Fla., Miami.—Election was held in Larkin Dist., Dade county, to vote on \$12,000 school bonds. Result not stated. Address Board of Education.

Fla., Ocala.—Bids will be received by Board of County Comms., Marion County, Sept. 8 for \$120,000 refund warrants. P. H. Nugent is Clerk. Further particulars will be found in the advertising columns.

Fla., Palm Beach.—Election is to be held Aug. 14 to vote on bonds special school Dist. No. 1. Address Board of Trustees.

Fla., Palmetto.—\$50,000 6 per cent. 20-year bonds Palmetto Dist., Manatee county, defeated.

Fla., Palmetto.—Bond election will be held Aug. 10 to vote on 6 per cent. water, sewer and street-improvement bonds. Amount reduced from \$25,000 to \$16,000; denomination \$1000. Chas. Dennett is Mayor.

Fla., Starke.—Election is to be held Oct. 5 to vote on \$26,000 sewerage and \$16,000 paving 6 per cent. 30-year bonds. C. F. Hoover is Mayor and C. A. Fitch, Town Clerk.

Fla., Titusville.—Election is to be held in Brevard county Aug. 19 to vote on \$100,000 6 per cent. 25-year bonds Special Tax School Dist. No. 1, Brevard county. E. Svedellus is Chrmn. Board Public Instruction, Brevard county.

Ga., Blakely.—\$10,000 5 per cent. 1-20-year \$500 denomination ice-plant bonds are voted and bids for same will be received until noon Aug. 15. W. W. Fleming is City Clerk.

Ga., Cartersville.—Election to vote on \$85,000 5 per cent. 20-year \$1000 denomination public-improvement bonds is postponed from July 17 to Aug. 17. G. W. Young is Mayor and G. W. Waldrup Clerk.

Ga., Coolidge.—Election is to be held August 16 to vote on \$6000 school \$4500 water and \$4500 electric-light 5 per cent. 30-year bonds. G. T. Knight is Mayor and S. C. Nesmith Clerk.

Ga., Girard.—J. N. Odum, Mayor, denies report that bonds are to be issued.

Ga., Jonesboro.—Aug. 21 election will be held to vote on \$15,000 5 per cent. \$500 denomination bonds Jonesboro School Dist. T. C. Cannon is Chrmn. of Board.

Ga., Leesburg.—\$27,000 road and \$7500 bridge, Lee county, bonds are voted. Address County Comms.

Ga., Menlo.—Bids will be opened Aug. 17 for \$8000 of an issue of \$12,000 5 per cent. 20-year school district bonds; dated Aug. 17, 1915; denomination \$400. Address Menlo School Board.

Ga., Waycross.—Election will probably be called to vote on \$35,000 bonds for Y. M. C. A. Address The Mayor.

Ky., Ashland.—City is considering question of issuing \$200,000 5 per cent. 20-year bonds as follows: \$100,000 for city building, jail, market-house, crematory for garbage and truck for fire department; \$100,000 for debts against the city. William Salisbury is Mayor.

Ky., Dayton.—\$134,000 4 1/2 per cent. 20-year refunding bonds have been purchased by the Newport National Bank.

Ky., Lexington.—The \$100,000 school bonds to be voted on Nov. 2 are 30-year 5 per cents. Address Board of Education.

Ky., Harlan.—\$7500 sewer bonds are voted. Address The Mayor.

Ky., Lexington.—Election is to be held in Fayette county in Sept. to vote on \$300,000 5 per cent. 5-30-year \$100 denomination road bonds. Theo. Lewis is County Clerk.

Ky., Princeton.—Election is to be held to vote on \$25,000 school bonds. Address Board of Education.

Ky., Slaughter'sville.—\$4500 6 per cent. 20-year school bonds have been purchased by the Hanchett Bond Co., Chicago, at 102.

La., New Orleans.—Board of Liquidation has taken steps to place on the market \$100,000 Audubon Park bonds.

La., St. Francisville.—West Feliciana parish proposes to issue 5 per cent. certificates of indebtedness running from 2 to 12 years. Address C. T. Tooram, Clerk Police Jury.

Miss., Clarksdale.—Bids will be received until Aug. 3 for \$150,000 5 per cent. city hall, school, fire station, light and sewer bonds; dated Nov. 1, 1915; maturity Nov. 1, 1921, to Nov. 1, 1925. M. W. Purnell is City Clerk. Address City Comms.

Miss., Columbus.—Election is to be held in Lowndes county Aug. 3 to vote on road bonds Supers. Dist. No. 4. W. S. Newby is Prest. Board of Supers.

Miss., Mendenhall.—\$2500 6 per cent. school bonds have been purchased by McCalgan Bros. of McComb City. D. C. Hall is Town Clerk.

Miss., Ripley.—Bids opened July 21 for \$13,000 6 per cent. school-building and refunding bonds. H. R. Spight is Town Clerk.

Miss., Starkville.—\$150,000 11-30-year road bonds Supers. Dist. No. 1, Oktibbeha county, have been purchased by F. D. Harvey & Co., Memphis, Tenn.

Mo., Springfield.—City Council has voted to issue \$85,000 current expense bonds. Address The Mayor.

Mo., Washington.—Election is to be called to vote on \$60,000 5-20-year municipal bonds. P. F. Peitz is Mayor.

N. C., Burlington.—All bids received July 12 for \$40,000 5 per cent. 30-year school building bonds were rejected. Address The Mayor.

N. C., Dobson.—Election is to be held in Bryan township, Surry county, Aug. 24 to vote on \$35,000 5 per cent. 30-year road bonds. S. G. Brim is Clerk and W. B. Sparger Chrmn. Board County Comms.

N. C., Dobson.—Election is to be held Aug. 10 in Surry county to vote on \$30,000 \$500 denomination Westfield township, \$30,000 \$1000 denomination Shoals township, and \$20,000 \$1000 denomination Eldora township 6 per cent. 30-year road bonds. J. B. Sparger is Chrmn. and S. G. Brim Clerk Board of County Comms.

N. C., Farmville.—Bids will be received until noon Aug. 17 by Ben A. Joyner, Mayor, for \$40,000 5 1/2 per cent. sewer, water and electric-light extension \$1000 denomination bonds, dated April 1, 1915, maturing April 1, 1920 to 1945, inclusive. Further particulars will be found in the advertising columns.

N. C., Graham.—Graham and Thompsons townships, Alamance county, have voted \$55,000 railroad-aid bonds. Address County Comms.

N. C., Greensboro.—\$60,000 school 5 per cent. \$1000 denomination bonds Morehead and Gilmer precincts, dated July 1, 1915, and maturing 1916 to 1945, inclusive, are voted and will soon be placed on the market. T. J. Murphy is Mayor and John S. Michaux City Clerk.

N. C., Greenville.—Elections are to be held in Falkland and Farmville townships, Pitt county, Sept. 21, each to vote on \$50,000 5 per cent. 30-year \$100 denomination road bonds. Address County Comms. at Greenville.

N. C., Henderson.—\$50,000 Vance county 5 per cent. road bonds have been purchased by local banks. Address County Comms.

N. C., Maxton.—\$20,000 5 1/2 per cent. school bonds have been purchased by C. W. McNear & Co., Chicago, at par and premium of \$126. H. C. McNair is Secy. Maxton Special School Dist.

N. C., Norlina.—Bids were received until 10 A. M. July 20 for \$12,500 20-year school bonds Norlina Special Tax Dist.; interest 5, 5 1/2 and 6 per cent.; denomination \$500. Howard F. Jones is Secy. Board of Education Warren County.

N. C., Pilot Mountain.—Issue of road bonds has been purchased by Sidney, Spitzer & Co., Toledo, O., at par.

N. C., Plymouth.—\$30,000 Washington county bonds for paying off floating indebtedness are to be issued. Address County Commissioners.

N. C., Raleigh.—Election will be held about Sept. 15 to vote on \$100,000 5 per cent. 30-year Raleigh township, Wake county, school bonds; denomination \$100 to \$1000; James I. Johnson is Mayor.

N. C., Tryon.—Bids will be received until Aug. 10 for \$300 6 per cent. 20-year school bonds. Geo. A. Gash is Chrmn. Tryon Graded School Trustees. Further particulars will be found in the advertising columns.

Okla., Boswell.—\$14,000 6 per cent. 5-10-year \$1000 denomination electric-light bonds were purchased at par by R. J. Edwards. Address J. E. McCleary, Boswell.

Okla., Ada.—Election will be held in Pontotoc county in about 40 or 50 days to vote on bridge bonds. A. L. Miles is County Clerk.

Okla., Chandler.—\$5000 water-works bonds have been purchased by the Union National Bank of Chandler at 101.

Okla., Miami.—Steps are being taken to hold an election in Ottawa county to vote on \$75,000 courthouse and jail bonds. Address County Comms.

Okla., Reed.—\$8000 Reed School Dist. 6 per cent. 20-year bonds have been sold. Address Board of Trustees.

S. C., Bethune.—Bids will be received until noon July 26 for \$9000 5 per cent. bonds School Dist. No. 22, Kershaw county; denomination \$500 or \$1000. J. A. Stone is Clerk Board of Trustees.

S. C., Blythewood.—Election is soon to be held to vote on \$7000 high school bonds. Address D. B. Roney.

S. C., Orangeburg.—Bids will be received until noon Aug. 9 by T. O. S. Dibble, City Clerk, for \$30,000 5 per cent. 20-40-year water

and light bonds. R. F. Bryant is Mayor. Further particulars will be found in the advertising columns.

S. C., Sumter.—\$50,000 5 per cent. 20-year bonds School Dist. No. 17 have been purchased by Sidney Spitzer & Co., Toledo, O., at \$847.56 premium. D. M. Blanding is Secy. School Board.

S. C., Townville.—\$5000 Townville School Dist. bonds are voted. Address Board of Trustees.

S. C., Union.—Election is to be held Aug. 10 to vote on \$25,000 6 per cent. 20-40-year water-works bonds. L. C. Wharton is Mayor.

S. C., Walterboro.—Election is to be held July 29 to vote on \$15,000 municipal improvement bonds. H. W. Black Jr., is Chrmn. Board of Public Works.

Tenn., Chattanooga.—\$80,000 5 per cent. 30-year paving bonds are to be issued. Jesse M. Littleton is Mayor.

Tenn., Columbia.—Election to be called in Maury county is for purpose of voting on \$200,000 road bonds. J. T. McKnight is County Judge.

Tenn., Columbia.—Ordinances have been passed authorizing issue of \$29,000 5 per cent. paving bonds. E. E. Erwin is Town Recorder.

Tenn., Crossville.—All bids received July 12 for \$100,000 5 per cent. 20-year Cumberland county road bonds were rejected and new bids will be opened Aug. 14. C. G. Black is Secy. County Comms.

Tenn., Jacksboro.—\$7000 of an issue of \$15,000 5 per cent. 10-year school-building \$500 denomination Campbell county bonds are being offered. Wm. Allen is County Judge.

Tenn., Jacksboro.—Sale of \$10,000 6 per cent. Campbell county warrants for road repair is authorized. Wm. Allen is County Judge.

Tenn., Lenoir City.—Election to vote on \$10,000 floating indebtedness and \$5000 school bonds is postponed from Aug. 7 to Aug. 21. F. A. Weiss is Mayor.

Tenn., Madisonville.—\$300,000 5 per cent. 15-25-year Monroe county road bonds defeated.

Tenn., Maynardville.—Bids will be received until 1 P. M. Aug. 23 for \$100,000 5 per cent. 5-30-year Union county road and bridge bonds. Denomination \$100 to \$1000. Geo. N. Taylor is Chrmn. Board of County Comms. Further particulars will be found in the advertising columns.

Tenn., Memphis.—Bids will be received until 2:30 P. M. Aug. 10 for \$575,000 5 per cent. \$1000 denomination general liability bonds, maturing Aug. 1, 1918, to Aug. 1, 1927. E. H. Crump is Mayor and C. C. Pashby, City Clerk.

Tenn., Morristown.—Bids will be received until noon Aug. 9 by W. D. Bushong, Chrmn. Pike Comms., Hamblen county, for \$150,000 5 per cent. 20-30-year \$1000 denomination pike bonds.

Tenn., Park City, P. O. Knoxville.—\$18,000 of bonds for schools is authorized by City Council. It is stated the bonds have been purchased by J. C. Mayer & Co., Cincinnati. Address The Mayor.

Tenn., Spring Hill.—\$6000 street-improvement bonds are voted. Address The Mayor.

Tenn., Tazewell.—\$372,000 5 per cent. Claborn county bridge and road bonds were purchased by the Mercantile-Union Trust Co., I. B. Tigrett, Cash., Jackson, Tenn., at par.

Tenn., Waverly.—\$250,000 5 per cent. 5-30-year Humphrey county road bonds have been purchased by J. B. Tigrett, Cashr. Mercantile Union Trust Co., Jackson, at par, accrued interest, expenses of printing bonds, etc.

Tex., Austin.—The Attorney-General has approved the following securities: \$100,000 5 per cent. school bonds Palestine; \$1000 5 per cent. 20-year bonds Taylor county common school Dist. No. 49; \$10,000 5 per cent. 10-40-year bonds Jourdanston street improvements; \$12,000 5 per cent. 10-40-year Nacogdoches county common school Dist. No. 23; \$5000 5 per cent. 20-year bonds Midlothian street-improvement bonds.

Tex., Austin.—\$150,000 Travis County Hospital bonds defeated.

Tex., Beeville.—\$15,000 5 per cent. 10-30-year \$500 denomination sewer bonds are voted; dated Aug. 2, 1915; maturity Aug. 2, 1945. Bids for same will be opened Aug. 2, 1915; option after 1925. W. G. Gayle is City Clerk.

Tex., Beaumont.—Election will be held in Beaumont and Jefferson county Aug. 20 to vote on \$25,000 insane hospital and city-jail bonds. Address County Comms.

Tex., Clarksville.—\$405,000 Red River coun-

ty road bonds are voted. Address County Comms.

Tex., Cleburne.—Following districts in Johnson county have voted school bonds: Mount Carmel, \$1000; Prairie Grove, \$1000; Cahill Chapel, \$1000; West Liberty, \$3000; Bethany, \$2000; Plainview, \$2500; Barnesville, \$5000; Godley, \$15,000. Address County Comms.

Tex., Denton.—Bids were received until 2 P. M. July 20 for \$75,000 school and \$10,000 street and sidewalk 5 per cent. 10-40-year bonds. W. L. Foreman is Mayor and J. W. Erwin City Secy.

Tex., Gonzales.—\$1500 bonds Gonzales County Common School Dist. No. 29 are voted. Address Board of Trustees.

Tex., Haslet.—\$7500 bonds Haslet School Dist., Tarrant county, are voted. Address Board of Trustees.

Tex., Lohn.—The \$7500 Lohn School Dist., McCulloch county, bonds recently voted have been sold. Address Board of Trustees.

Tex., Jefferson.—Election is to be held Aug. 17 to vote on \$28,000 5 per cent. 15-30-year bonds Common School Dist. No. 7, Marion county; denomination \$500. P. G. Henderson is County Judge.

Tex., McKinney.—Collin county has sold the following bonds: \$375,000 Dist. No. 4 bonds to Englehart & Cain, Gary, Ind.; \$300,000 Dist. No. 8 bonds to W. T. Montgomery of San Antonio, Tex.

Tex., Mexia.—Election is to be held Aug. 10 to vote on \$24,250 5 per cent. 10-40-year schoolhouse refunding bonds. Address Board of Education.

Tex., Mt. Calm.—Mt. Calm School Dist., Hill county, bonds are voted. Address Board of Education.

Tex., Orange.—Election is soon to be held to vote on \$150,000 wharf, \$150,000 school and \$25,000 street bonds. Address The Mayor.

Tex., Pear Valley.—\$4200 Pear Valley School Dist., McCulloch county, bonds are voted. Address Board of Trustees.

Tex., Rio Grande.—Bids will be received until Aug. 1 by Sam P. Vale, Supt. Public Instruction Starr county, for \$2200 5 per cent. 10-40-year bonds School Dist. No. 4; dated May 11, 1915; denomination \$100.

Tex., San Marcos.—Election is to be held Aug. 17 to vote on \$3500 crematory and \$3500 street bonds. Address The Mayor.

Tex., Santa Anna.—\$6000 sewer bonds are voted. Address The Mayor.

Tex., Shepherd.—\$10,000 school building, Shepherd School Dist., bonds have been voted. Address Board of Trustees.

Tex., Temple.—\$40,000 fire department bonds have been purchased by N. W. Halsey & Co., Chicago, at par, accrued interest to date and premium of \$127.

Tex., Waxahachie.—Bids will be received by W. M. Tidwell, Judge Ellis County, for \$45,000 5 per cent. 10-40-year \$1000 denomination road-improvement bonds; dated July 1, 1915.

Va., Buckingham.—Bids will be opened July 26 for \$40,000 of an issue of \$50,000 5 per cent. 20-year \$500 Buckingham county road bonds. The other \$10,000 have been sold. W. J. Hubbard is Clerk, Circuit Court, Buckingham county.

W. Va., Hamlin.—\$260,000 Lincoln county road bonds defeated. Another election will probably be called. Address County Comms.

W. Va., Hinton.—Election ordered Aug. 7 to vote on \$100,000 6 per cent. 32-year \$100 denomination road and bridge bonds Greenbrier and Talcott Dist., Summers county, has been declared void, and another election will be called. J. M. Carden is Clerk Summers County.

W. Va., Logan.—Election is to be held in Logan Dist., Logan county, Sept. 7 to vote on \$200,000 road bonds. Address County Commissioners.

W. Va., Broad Oaks (P. O. Clarksburg).—Bids will be opened Aug. 2 for \$22,500 6 per cent. 10-year \$500 denomination paving bonds; dated July 1, 1915; maturity July 1, 1925. Address C. A. Rogers.

FINANCIAL NOTES

The Baltimore Commercial Bank has opened stock subscription books at Room 204 in the Coca-Cola Bldg. and has issued a folder containing information concerning the institution and its plans. The bank will be located in quarters on the ground floor of the building, which is at the corner of Pratt St. and Market Space. It is stated that the controlling factor in the choice of this location was the rapid development of business in this neighborhood in recent years.

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Proposals advertised in the Manufacturers Record bring good results.

PROPOSALS.

Oil Engine, Pump, Tank, Sewers

Sumner, Miss.

Bids will be received by the Mayor and Aldermen of Sumner, Mississippi, until Friday, August 6, at 3 P. M., for 25 H. P. Kerosene Engine and 300 G. P. M. Centrifugal Pump in unit erected; 50,000-gallon Steel Tank, 100-ft. Tower; 50,000-gallon Concrete Reservoir; 4500 lin. ft. 8-inch Sewers, pipe separate. The right is reserved to reject any or all bids. Certified check 5 per cent. except from well-rated manufacturers; bond 25 per cent., same exception.

Plans on file with Town Clerk and Dabney Engineering Co., Memphis.

ROWE HAYS, Mayor.

Road Construction

Russellville, Ark.

Sealed bids will be received by the Commissioners of Road Improvement District No. 1, Pope County, Arkansas, at Russellville, until 1 P. M. Monday, August 2, 1915, for the construction of approximately 11 miles of native stone, macadam, and 12 miles macadam, native stone base, with trap rock finishing course.

Each bid must be accompanied by a certified check equal to 1 per cent. of bid.

Plans and specifications may be had upon application to Mr. Otto Yenglin, Engineer for District, Russellville, Arkansas.

The Commissioners reserve the right to reject any or all bids.

W. J. SIMPSON, Chairman;
WILL NEIL, Secretary;
OSCAR WILSON.

RAILROAD AID BONDS VOTED.

\$55,000 Approved by Citizens for Alamance, Durham & Orange Line.

Junius H. Harden, president of the Alamance, Durham & Orange Railway & Electric Co., Burlington, N. C., wires the MANUFACTURERS RECORD that Graham, the county-seat of Alamance county, and Thompson's township, adjoining, have voted \$55,000 of bonds to aid construction of the railway, and by the largest majorities yet given for bonds in behalf of this enterprise. The proposed line will be about 50 miles long from Ossipee to Durham via Burlington, Graham and other points.

Poor's Manual of Public Utilities.

Poor's Manual of Public Utilities for 1915 is out, and this edition is larger and contains more information than ever before. It is a standard and reliable reference work devoted exclusively to public service corporations. It is painstakingly accurate and is deservedly recognized as an authority concerning such enterprises. Moreover, it is complete up to June 1, 1915, for all consolidations and reorganizations before that time are duly recorded and the names of these merged companies are given in the general index.

In conjunction with the statements of parent companies are shown the statements of subsidiary, controlled and affiliated companies, and each of them presents when available the latest published annual income accounts and balance-sheets, generally in comparative form for several years, so that changes in the trend of business of the respective companies may be seen. There are a number of maps which will be found useful in connection with the reading matter, and in the front of the volume is a record of stock and bond prices for the last 10 years.

The book is the second of Poor's series devoted to data of American corporations. The Manual of Railroads

was issued in January and the third volume, the Manual of Industrials, will be issued in a few weeks. It is of interest that the Poor's Manual Co. has been in existence for nearly 50 years. Its address is 80 Lafayette street, New York.

Advertising That Brings Results.

Henrietta, Tex., has recently secured a new glass factory. A local paper states that Edgar Berry, who is promoting the enterprise, has already shipped a part of the machinery, etc., into Henrietta. W. A. Squires of Henrietta, who is interested in the development, writes to the MANUFACTURERS RECORD to the following effect:

Henrietta, Tex., July 6, 1915.

Manufacturers Record,
Baltimore, Md.:

Gentlemen—The new glass factory was secured for Henrietta through an advertisement carried in the MANUFACTURERS RECORD by the Booster Club of this city. You are at liberty to publish this letter if you like.

Yours respectfully,
W. A. SQUIRES.

A word to the wise is sufficient.

A Packing-House Wanted in Columbia.

A packing-house for Columbia, S. C., is proposed by John W. Lillard, chairman of the board of directors of the Chamber of Commerce of Columbia. He is seeking to organize a company with \$150,000 capital. In his circular to those he invites to subscribe for stock, Mr. Lillard points out that South Carolina spends annually about \$25,000,000 for packing-house products. Columbia spends approximately \$3,200,000. There are now 700,000 hogs and 40,000 cattle in the State. The packing plant would consume 15,000 cattle and 100,000 hogs annually. This would foster stock-raising in the State, keep millions of money at home and add to the population, wealth and prosperity of the entire State.

To Extend Natural Gas Supply.

Plans previously under consideration for distributing natural gas in Baltimore and other cities have been revived, and it is reported that the Columbia Gas & Electric Co., Cincinnati, is planning to furnish gas (from Standard Oil Co.'s properties in West Virginia fields) to Baltimore, Washington, Richmond and other cities. The Columbia corporation advises it can make no statement at this time. Previously it was understood that the Standard Oil Co. had obtained rights of way for pipe lines from its gas fields in Weston county, West Virginia, to Baltimore, but no construction was undertaken. A. B. Leach, New York, is president of the Columbia corporation and connected with Standard Oil interests. It has been estimated that an investment of probably \$25,000,000 will be required to introduce natural gas in Baltimore, to include utilizing as far as possible the mains of the Consolidated Gas, Electric Light & Power Co. Mayor James H. Preston of Baltimore is interested in securing natural gas for this city, and proposes a meeting of interested capitalists to facilitate the plan.

A Texas Plan to Finance Cotton.

A report from Fort Worth, Tex., says that members of the Fort Worth Clearing House Association have taken steps to provide warehouse facilities and to finance the cotton crop this year, the plan being to extend the movement through the eleventh reserve district.

Local bankers pledge themselves to urge farmers to take advantage of warehouses and store their surplus cotton, so that a fair price may be received. It is proposed to get a State organizer from Austin to supervise the organization of warehouses under Texas laws. It is said that the warehouse receipts would then become collateral acceptable by any Federal Reserve bank.

SAFETY FIRST APPLIED TO MANUFACTURING

IF you desired to enlarge your present plant or was burned out, would you attempt to decide the important matters of design and engineering yourself and do the work with local contractors without further investigation, or would you engage the help of a well-known engineer in this special work to assist you in your decisions and to give an accurate estimate of cost?

The company represented below had their plant burned out completely, and pondered over this matter for many weeks, finally deciding to engage the writer to investigate with them and bring about a decision, after which he was engaged to take charge of the work of designing, building and equipping the entire plant.

The cost for this investigation cost them a fractional part of 1 per cent., but the saving was many thousand dollars, and it does not matter whether you expect to spend \$25,000 or \$250,000, the expense of such investigation is comparatively nothing as compared with the possible saving over a period of years in securing the best for the least first cost.

The exact copy of letters shown below tell of the satisfaction of this service, and the further knowledge of having a modern plant designed, built and equipped at the lowest possible cost has satisfied the stockholders with the management.



SOME STATEMENTS BY OFFICIALS

The interest alone on what we paid for one year's insurance will carry a like amount of insurance on the new plant and contents.

We have the most complete factory I ever saw. We could not have had this without your assistance.

I never met anyone who could so thoroughly cover every detail, from the foundation of the buildings to the complete installation of the entire machinery, as you have done.

You have given us more than you promised in results, which would have been impossible under any other method.

The completed cost has been within 1 per cent. of your original estimate.

MR. C. H. BALLEW:

DEAR SIR—In your preliminary report and recommendations regarding our requirements you estimated the cost to be 47½ cents per square foot of floor space for heavy type, slow burning mill construction, and the work now completed by you shows on our books to have cost 47½ cents. On all other estimates you have been close, but none as close as this figure.

Aside from our large saving in cost for production due to modern plant and equipment we find the insurance item alone to be an important item, and from the rates now given us by old line companies (not mentioning the mutuals) the interest alone on what we formerly paid for one year's insurance will carry a like amount on the new plant and contents indefinitely.

These facts show that modern methods pay, and we feel that we are just entering a new era of business prosperity.

SIGNED BY THE SECRETARY AND TREASURER.

MR. C. H. BALLEW:

DEAR SIR—I am pleased to write you this letter in acknowledgment of the thoroughly satisfactory service you have rendered this company in designing, building and equipping our new plant.

Aside from my appreciation of your high qualifications as an engineer, your ability to organize men, and your methods of organization and co-operation, I feel that you have given us even more than you promised in results, and that these results would have been impossible to secure under any other method.

Accept from me personally my best wishes for your continued success in the line of work you have wisely chosen and for which I believe you are eminently fitted.

SIGNED BY THE VICE-PRESIDENT AND GENERAL MANAGER.

The writer was brought up in a large manufacturing plant, working through all departments while studying men and methods, later attending a well-known technical institute, where he secured the degree of Mechanical and Electrical Engineer, to which has been added more than 20 years of successful work east, west, north and south in the designing, building, equipping, organization and operation of manufacturing industries, and were it necessary could secure hundreds of letters of appreciation of service rendered equal to those shown in this and the two other advertisements in the Manufacturers Record preceding this issue.

To anyone interested I will be pleased to send a recent address delivered in New York before 1600 business men on BUSINESS EFFICIENCY, which will give a better understanding of my methods. This will be sent without cost or obligation.

C. H. BALLEW, Consulting Engineer and Manufacturing Expert
5123 Sheridan Drive, CHICAGO, ILL.

Each issue of the Manufacturer Record of July 8th and 15th contains a page advertisement of plants designed, built and equipped by the writer, which are claimed by the owners to be the largest and most modern of their kind in the world.

Classified Opportunities

MINERAL AND TIMBER LANDS WATER POWERS MISCELLANEOUS PROPERTIES

MINING PROPERTY FOR SALE.—Ruby and commercial corundum deposits, china clay deposits, mica mines, copper and gold deposits. Anyone interested address Charley C. West, Box 115, Franklin, N. C.

ZINC MINES for sale or lease; would incorporate; zinc ore \$110 ton. Fortunes in zinc. H. T. Bule, owner, Buffalo, Arkansas.

WE HAVE SOME LAND suitable for steam shovel work, also land for deep mining. Would lease or sell. Miller Bros., Mulberry, Kans.

FOR SALE.—Large tract of land, fully developed, showing that we have millions of tons of feldspar with potash, mica and granite. Full data and satisfaction given. If you mean business, write to McCray & Smith, Ridgeway, Henry Co., Va.

HAVE YOU A VALUABLE PROPERTY FOR SALE? Farm, timber land, mineral property or any other? We can help you get in touch with possible purchasers by an advertisement in these columns. For rates see head of this department.

FOR SALE ON REASONABLE TERMS. 25,000 acres, Escambia county, Alabama, especially adapted for colonizing. 24,000 acres coal and timber lands, located west of Birmingham, Alabama. 14,000 acres, located Southern Alabama, especially desirable for agricultural purposes or colonizing.

10,000 acres, located north Baldwin county, Alabama, especially adapted for a ranch. 5000 acres, especially desirable for citrus-fruit growing, including a townsite located just across the bay from Mobile. 5000 acres of hardwood timber, located on the Alabama River not far from Mobile. 500 acres, suitable for factory sites and subdividing, in Mobile.

100,000,000 feet of hardwood timber, located in Central Alabama. 30,000,000 feet long-leaf yellow pine, Southern Alabama.

I own and control all of the above-described properties, and I also act as a broker, so that I am in a position to meet most any requirements in Southern acreage property. Address H. H. Wefel, Jr., Mobile, Ala.

COAL MINE

FOR SALE.—Valuable coal-mining property within three miles of a city of 22,000 population, electric railway connection; big tipple in the city; freight rate, 25c. per ton; 400 acres of rights; 87 acres in fee; houses for 15 families; top equipment can take care of 500 tons per day. Will sell for one-half the price paid for the property five years ago. Mine now in operation. T. A. Pedley, Receiver, Owensboro, Ky.

COAL AND TIMBER LANDS

FOR SALE.—912 acres coal and timber land in Harlan county, Kentucky, fronting on Louisville & Nashville Railroad; timber estimated by an expert at 5,000,000 feet; eleven seams of coal from 3½ to 8½ feet above water level; the 8½-ft. seam within 400 feet of railroad track. Would be glad to show property to any prospective purchaser. Address C. A. Vance, P. O. Box No. 144, Wise, Virginia.

PHOSPHATE ROCK DEPOSITS

FOR SALE.—Two million tons of blue rock phosphate in the ground near Mt. Pleasant, Tenn., running from 58 to 72 per cent. bone phosphate of lime; no potash required; simply grind the rock and apply to land; spur of the L. & N. R. runs through it. Capt. W. N. Hughes, U. S. A., 523½ Broadway, Nashville, Tenn.

ZINC AND LEAD LANDS

RICH ZINC AND LEAD LANDS FOR SALE in Boone, Marion, Newton counties, Arkansas, and Taney county, Missouri; 3584 acres selected 15 years ago in the richest mineral belt by competent prospector and experienced zinc miner. Address C. M. Fenton, Zinc, Arkansas.

FOR LEASE.—120 acres near Yellville, Marion county, Arkansas; good wagon road; zinc shown up; fine strike recently adjoining lands; very favorable lease to responsible persons. Have developed zinc mines now in operation in Rush District at very favorable prices. Fredricks, Springdale, Ark.

TIMBER

REAL TIMBER BARGAIN.—50,000,000 ft.; 70% N. C. pine, poplar and cypress, all original growth; on Southern R. R. in South Carolina. Liberal terms and low price. J. P. Mulherin (owner), Augusta, Ga.

FOR SALE.—Cutting rights over 180,000 acres of easily worked, accessible forest land; 60,000 acres heavily timbered, and 40,000 acres very heavily timbered, averaging over 35,000 super-feet to acre. A total of over 1,600,000,000 super-feet of first-class hard and soft woods. Inspection by expert cruisers is solicited. For further particulars apply to F. W. Frankland, Marguerite Place, Lake Charles, La.

RATES AND CONDITIONS

Rate 20 cents per line per insertion. Minimum space accepted, four lines. Maximum space accepted, 25 lines. In estimating the cost, allow seven words of ordinary length to a line. When the advertisement contains a number of long words, proper allowance should be made. Terms: Invariably cash with order; check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, whiskey or mining stock advertisements accepted. Rate for special contracts covering space used as desired within one year as follows: 100 lines, 18c. per line; 300 lines, 16c. per line; 500 lines or more, 15c. per line.

SOME excellent Southern hardwood timber limits. They are all bargains and will stand strictest investigation. Write me what you want. L. N., P. O. Box 596, Buffalo, N. Y.

TIMBER LAND

5400 ACRES virgin hardwood timber land in East Tennessee. Price \$10 per acre. Farm Realty Company, 828 Jefferson Co. Bank Bldg., Birmingham, Ala.

FOR SALE.—Several desirable pieces of timber at bargain prices. If you are in the market and want a money-maker, write George J. Philp, Box 42, Oil City, Pa.

FRUIT, FARM AND TRUCK LANDS

THESE COLUMNS ARE CLOSELY READ BY PEOPLE for information of all kinds about Southern properties of every description. If you have a property of any kind that you want to dispose of, try an advertisement in these columns. Others have to their advantage. For rates see head of department.

ALABAMA

TWO BUMPER CROPS A YEAR is what we grow in Alabama. Land that will grow 100 bushels of corn, 3½ tons of peavine hay and 20 bushels of cowpeas per acre in one season, and grow 450 bushels of Irish or 300 bushels of sweet potatoes, 90 bushels of oats, 1½ tons soy hay and 25 bushels of beans, or 300 crates of cabbage per acre, besides a second crop to follow, is what we have to offer at prices \$10 to \$25 per acre. Representatives wanted throughout the Northern States and Canada. Write for booklet. American Lands Corporation, 1003-6 Jefferson Co. Bank Bldg., Birmingham.

ALABAMA FARMS.—I have some good small and large farm propositions for cash, or on terms, and some for exchange. Do not forget that farm lands advanced 18 per cent. per year last census; the advance will be even greater next census. L. P. Giddens, 824 Jefferson Bank, Birmingham, Ala.

FOR SALE.—BARGAIN.—In orange-growing section of Ala., 20 acres, level, fenced, 14 acres under cultivation, fruit trees, 5-room house, barn, etc.; 2½ miles from Foley. Price, including stock, crops, implements, \$2700 cash. Owner, Box 52, Foley, Ala.

FOR SALE OR EXCHANGE.—An old-time Southern plantation near Miss. line on Tombigbee River; 2600 acres of land; 1400 in cultivation, level, rich and productive. Fine old colonial home of 12 rooms. This is one of the best improved farms in the South. Price \$30 per acre on any reasonable terms. Part exchange in city property considered. Bailey-Jones Real Estate & Ins. Co., 221 N. 21st St., Birmingham, Ala.

GOOD INVESTMENT.—We offer for sale 13,000 acres of best farm, fruit and stock-raising land in solid body, situated only a short distance from Bay Minette in Baldwin county, Alabama.

This land lies well, being level to slightly rolling, with several streams of running water through the tract, making it very desirable for colonization purposes. This tract can be purchased for the low price of \$7 per acre. Will arrange terms. T. L. Moore & Co., Room 109 Masonic Temple, Mobile, Alabama.

ALABAMA LAND BARGAIN.—3500 acres on main line G. & C., 80 miles west of Birmingham. Solid body runs to Black Warrior River, navigable to deep water. Partly improved, and has enough cane to winter 1500 head of cattle. Fine corn and grass land. Special price for immediate sale, \$10 per acre; half cash; balance in 5 annual payments, 6%. For further information and other bargains write American Lands Corporation, 1003-6 Jefferson Co. Bank Building, Birmingham.

FLORIDA

FREE.—William L. Larkin's booklet, "The Truth About Florida," with a six-months' subscription (at one-half regular rates) to The Indian River Farmer. Fruit growers, truckers, general farmers, folks interested in Florida, send 25c. to The Indian River Farmer, V-1, Vero, Fla.

CHOICE citrus and truck lands for sale in the Manatee River section of Manatee County, Florida; also water fronts. Send for soil survey report and views. Manatee River Land Co., Inc., 101½ Franklin St., Tampa, Fla.

FLORIDA.—8000 acres cut-over land lying between Lake Crescent, Lake Louise and Lake George, in Putnam and Volusia counties, traversed by main line of A. C. L. Railway; large portion especially adapted to orange and grapefruit culture; balance finest potato and general farming land; lands all round selling \$20 to \$100 per acre. My price, \$10 per acre in a body; terms. Correspondence solicited. Chas. A. Brown, Jr., 30-31 Buckman Building, Jacksonville, Fla.

FOR SALE.—17,000 acres of farming and fruit land; near Tampa; timber will cut 2000 feet to acre. Price \$10 an acre. Terms. Address J. F. Stebbins, Zephyrhills, Fla.

GEORGIA

FARMS FOR SALE.—Southwest Georgia farms; wonderfully fertile; 10 acres up; \$10 up. Also stock farms. Open grazing entire year. Farmers' Land Loan & Title Co., Albany, Ga.

TENNESSEE

RIVER FARM AT SACRIFICE.—We have just listed a splendid river farm just one-half mile from a good town at a remarkably low figure. Owner has to sell before Sept. 1. Contains 230 acres—150 acres of river bottom. Price and full description furnished upon application. The Osborne Land Company, Farm Specialists, Bristol, Tennessee.

FOR SALE.—REAL ESTATE.—1333 acres; will make a good state proposition or a fine plantation, and cheap at \$5000; \$2000 cash and balance 1, 2 and 3 years at 6 per cent. Also want to borrow \$2000 on a nice 10-room house and 2 acres of land, all under fence; nice outhouse and splendid water; fine health resort; will pay 10 per cent. for 1 or 3 years, or will trade for Chattanooga property; right at Roddy Springs, Tenn. John G. Haley, Coalmont, Tenn.

TEXAS

FOR SALE.—3600-acre farm, all in cultivation, in Matagorda county, Texas; 2600 acres in fine crop of rice, balance in cotton and corn; two-thirds black hog wallow, balance sandy loam; whole tract under system of irrigation and drainage; 12 sets improvements; close to producing oil field; fine for subdivision; big bargain. For description write Hugh B. Eldman, Bay City, Texas.

VIRGINIA

IN THE VALLEY OF VIRGINIA.—Come to Augusta county, the wealthiest and most progressive in the State. The home of the red apple. Blue grass stock farms and orchards my specialty. J. F. Tannehill, Staunton, Va.

VIRGINIA ESTATES.—Colonial homes, plantations, farms, suburban homes, Alabamian pippin orchards, timber lands. Write us for what you want. We have it. R. N. Flanagan & Co., Charlottesville, Va.

BUSINESS OPPORTUNITIES

WANTED.—Plantations, timber, coal and mineral lands, manufacturing, business and investment properties, city and country, to exchange for other properties; have constant demand, also some cash buyers. Send full details. Arthur M. Connor, Oxford Bldg., Washington, D. C.

WE HAVE many very attractive business opportunities in the South to offer at all times; constantly adding to same. Submit your requirements to us. If we haven't got what you want, we'll get it. Connell Co., Columbus, Ga.

WANTED.—To lease light and water plant; town from 1000 to 10,000, preferably in Southern States; practical man, thoroughly experienced; know how to operate economically; can make an attractive offer. Address Box 400, Paris, Tenn.

WANTED.—\$25,000 for making changes in our plant to make paving and face brick from the best deposits of shale in a radius of 200 miles; no local competition; good position to interested party. Address No. 1794, care Manufacturers Record, Baltimore, Md.

FOR SALE.—An established business at a bargain; owner has good reasons for selling; money coming in daily. J. F. Stebbins, Zephyrhills, Fla.

\$75 CLEARED \$1112.50 in three months selling adjustable form units for building concrete culverts. You can do the same. Write before someone else gets your territory and find out how it was done. Frick Manufacturing Company, Fricks, Pa.

FOR SALE IN SHREVEPORT, L.A., best town in the South, one-half interest in large retail hardware, crockery, glassware store; will take about \$25,000 to swing deal; 40,000 population and growing rapidly; will be 100,000 in 10 years; 12 R. R. and Red River; low in freights; center of one of the largest oil and gas fields in the world. Business can be run up to \$150,000 per year at a 30 per cent. gross profit. Expenses can be kept around \$20,000. Address E. H. Vorderbaumen, Shreveport, La.

PARTY that has mercantile location, good trade established and making money needs more capital, and would make attractive proposition to party that would invest with or without services. Address H. V. Badgett, Newsom, N. C.

HOTEL FOR SALE

FLORIDA HOTEL.—Elegantly furnished 22-room hotel, located in orange section of Florida, for sale. Will sell on payments like rent, or exchange for good property. Box 614, Lakeland, Fla.

SEASHORE BUNGALOW AND MOTOR BOAT

FOR SALE.—Fine new furnished bungalow, beautiful location on Martha's Vineyard, Mass.; two large lots; also, good seashore 36-foot motor boat with cabin; all good condition. Property cost new over \$2300. Will accept best offer over \$1900. Wm. T. Abbott, 12 S. Market St., Boston.

CAPITAL WANTED

A GOING Florida colonization company, having net assets worth \$300,000 on a conservative valuation, needs capital to develop and market one of the best tracts of land in the State. This is not a get-rich-quick scheme, but an unusually sound business proposition. Want to hear from investor or broker who can handle a high-grade bond issue or cumulative preferred stock. Strict investigation invited. For particulars address B. H. Wilson, New Smyrna, Fla.

FINANCIAL

WANTED.—Mortgage loan of sixty thousand dollars on land on Eastern Shore of Virginia, worth one hundred and fifty thousand dollars. Near railroad and under cultivation. For further details address No. 178, care Manufacturers Record, Balto., Md.

REPORTS AND INVESTIGATIONS

ACCURATE political, financial or miscellaneous reports and intelligent investigations of any character in Birmingham, Alabama, and surrounding towns. The performance of your commissions solicited. References. P. O. Box 597, Birmingham, Ala.

SPANISH TRANSLATIONS

SPANISH TRANSLATIONS.—Expert; 20 years' experience in technical and legal work. Catalogues and patent specifications. F. L. Joannini, 3326 17th St., Washington, D. C. Summer address, Cascade, Md.

COLLEGES AND SCHOOLS

RENSELAER POLYTECHNIC INSTITUTE, TROY, N. Y.—Courses in Civil, Mechanical, Electrical and Chemical Engineering and General Science, leading to the degree of Civil Engineer (C.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Ch.E.), and Bachelor of Science (B.S.). Also special courses. Splendidly equipped new engineering laboratories. Send for catalogue to Registrar.

PATENT ATTORNEYS

MONEY IN PATENTS.—I secure your patent or return my fee. Manufacturers want Mills patents. Write for free booklet, "How to Get Your Patent and Make Your Profits Thereon." I assist in selling your patent. Mansell F. Mills, Registered U. S. Patent Attorney, 253 Com. Nat. Bank Bldg., Washington, D. C.

PROPOSALS

SEWERS

WATER-WORKS

ELECTRIC LIGHT PLANTS

BRIDGES

Resurfacing

Huntsville, Ala.
The City of Huntsville, Ala., will receive competitive bids for resurfacing 10,000 square yards of street with mineral rubber, tarvin or asphalt.

W. P. MONROE, Clerk.

Water-Works and Septic Tank

NOTICE TO CONTRACTORS.
Bids will be received by the Board of County Commissioners of Pinellas County, Clearwater, Florida, at their meeting, August 3, 1915, at 10 o'clock A. M., for materials necessary and installation of modern water-works plant and necessary plumbing, including sanitary system and small septic tank for convict camp. The right to reject any or all bids reserved by the Board.

CLEMENTS McMULLEN,
County Highway Engineer, Largo, Fla.
July 13, 1915.

Water-Works

Ashland, Alabama.
Sealed bids will be received by the Town of Ashland, Alabama, until 2 P. M. July 7, 1915, and then publicly opened, for the construction of a complete water-works system, consisting of the following items:

Distribution system, consisting of approximately four miles of 8", 6" and 4" cast-iron and 2" galvanized pipes, including hydrants, valves and specials.

150,000-gallon earth reservoir, lined.
Pumphouse, including motor-driven pump. Masonry dam and intake.

Plans can be seen at the office of H. L. Adair, Mayor, Ashland, Ala., or at the office of Edgar B. Kay, Engineer, Tuscaloosa, Ala., and specifications and bidding sheets obtained on application to the engineer.

The right is reserved to reject any and all bids.

EDGAR B. KAY, Engineer,
Tuscaloosa, Alabama.
H. L. ADAIR, Mayor,
Ashland, Ala.

Pumping Plant and Concrete Sluiceway

Sealed bids will be received until 10 o'clock A. M. August 4, 1915, by the Board of Supervisors of the Pablos River Drainage District, at the office of John H. Best, Illinois State Bank of Quincy, Quincy, Illinois, for a Steam-Driven Pumping Plant, containing two 42-inch centrifugal pumps, having a normal capacity of 46,000 gallons per minute each, against a maximum static pumping head of 15 feet. Alternative bids will also be received at the same time and place on an Oil Engine Driven Plant and on an Electrically Driven Plant of the same capacity and type of construction.

Bids will also be received at the same time and place on a Reinforced Concrete Sluiceway.

For further information address
HARMAN ENGINEERING CO.,
Peoria, Illinois.

Water-Works and Sewerage

Warrenton, N. C.

Sealed proposals will be received by the Mayor and Board of Commissioners of the Town of Warrenton, N. C., at the Town Hall, Warrenton, N. C., until 3 P. M. August 10, 1915, for Water-works and Sewerage.

The work will consist of:
Two motor-driven triplex pumps.
Pumping building and collecting well.
2 1/2-mile pole line.

75,000-gallon tower and tank.
About 6 1/2 miles of 6" and 8" cast-iron pipe lines.

About 7 1/2 miles of 8 to 15-inch pipe sewers.

Proposals must be marked, "Proposal for Water-Works and Sewerage."
All bids must be upon the blank forms provided in the proposal and contract and specifications.

Each bid must be accompanied by a certified check for \$1000 as evidence of good faith.

Plans and specifications will be on file at the office of the Secretary in Warrenton and at the office of the Engineer in Charlotte, and copies of the specifications, form of proposal, etc., will be mailed upon application to the Engineer when accompanied by Ten Dollars (\$10), which said amount will be refunded to those who submit bids, returning said specifications, etc., with bid.

The right is reserved to reject any or all bids.

J. W. ALLEN, Mayor.
R. J. JONES, Secretary.

Engineer:
GILBERT C. WHITE,
Charlotte, N. C.

Courthouse

Madison, W. Va.

By virtue of an order made and entered of record by the County Court of Boone County, West Virginia, on the 9th day of July, 1915, the undersigned Clerk of said Court will receive sealed bids on behalf of said Court until noon of August 10, 1915, for the construction of a Courthouse for said Boone County, on the site deeded to the said Court by Julian Hill and wife, according to the blueprints, plans and specifications for such Courthouse prepared by H. Rus Warner, architect, and now on file in the office of said architect in the City of Charleston, West Virginia.

Bids will be considered either for the completion of the building as a whole, or for the completion of the outside work and the inside work separately. At 2 o'clock P. M. of August 10, 1915, all bids will be opened and considered by the Court.

The Court reserves the right to reject any and all bids, and before a final contract is closed the contractor will be required to give a bond, with good security, in a penalty to be fixed by the said Court, conditioned for the full and faithful performance of said contract.

Given under my hand this 13th day of July, 1915.

ELMER NELSON,
Clerk of said County Court.

Court Room and Jail

NOTICE TO CONTRACTORS.

Staunton, Va.

Sealed bids will be received at the office of the Clerk of Court for Augusta County, Staunton, Virginia, until noon July 26, 1915, for the construction of the Augusta County Jail and Jailers' Residence, and the Police Court Room and Headquarters for the city of Staunton, Va., to be erected in the city of Staunton, Va.

Each bid must be accompanied with a certified check for the amount of \$1000, payable to T. M. Smiley, Chairman of the Jail Committee, as a guarantee that if awarded the contract the successful bidder will promptly enter into contract and furnish a surety bond for fifty per cent. of the contract price.

The right is reserved to reject any and all bids.

Drawings and specifications may be seen at the office of Harry Burnett, Clerk of Augusta County, and S. D. Holsinger, City Manager, both at Staunton, Va., also at the Builders' Exchange, Roanoke, Va., and at the office of the Camden Iron Works, Roanoke, Va.

Contractors wishing to bid may obtain drawings and specifications from the Camden Iron Works, Roanoke, Va., by immediately applying for same, accompanying application with a certified check in the amount of \$15, payable to them as a guarantee that the plans and specifications will be returned to them after the bids are received, without cost to the architects, who will refund the amount of \$10, retaining the amount of \$5 to pay for the cost of printing the plans and specifications.

General contractors wishing additional sets, or subcontractors desiring a set, can obtain them by remitting certified check for \$10 to the Camden Iron Works of Roanoke, Va.

(Signed)
JAIL BUILDING COMMITTEE
OF STAUNTON, VA.
T. M. Smiley, Chairman.

Metal Furniture, Etc. for Courtroom

Brooksville, Fla.

On Monday, August 2, the County Commissioners of Hernando County, Florida, will receive sealed bids for the following, to wit:

Courtroom Metal Furniture.
Metal Furnishings for Vault.
Specifications of above may be had by applying to W. A. Edwards, Architect, 632 Candler Building, Atlanta, Georgia.

The right is reserved to reject any or all bids.

H. D. EVANS,
Chairman Board of County Commissioners.

Attest:
M. H. SNOW,
Clerk Circuit Court.
This July 7, 1915.

Creek Drainage

Sealed bids will be received at Courthouse, Salisbury, N. C., by Drainage Commissioners of Second and Beaver Dam Creeks, Rowan County, on July 31, for removal of about 250,000 yards of material to drain said creeks. Plans and specifications in Clerk's office, Salisbury, N. C. Certified check \$400 required. Right to reject all bids reserved.

C. M. MILLER,
Salisbury, N. C., Engineer.

Motor Fire Truck

On Tuesday, August 3, 1915, the Commissioners of the City of Clarksdale, Miss., will open sealed proposals for furnishing f. o. b. Clarksdale, Miss., one triple combination motor pumping engine. Each bid should be marked "Fire Truck Proposal," accompanied by a certified check for \$250, and addressed to M. W. Purnell, City Clerk. For further information address John Donohue, Fire Chief.

M. W. PURNELL,
City Clerk.

Bridges

Sardin, Miss.

Contracts will be let at Sardin, Panola county, Miss., on the first Monday in August, 1915, for two bridges and one trestle, to be built of steel with concrete abutments, as per plans on file, or of concrete complete, as follows:

Bridge on the Memphis Road 3 1/2 miles west of Sardin, 1-40'x12'.

Bridge on Taylor Road 3 miles southwest of Sardin, 1-35'x12'.

Trestle on Como and Glenville Road 3 1/2 miles east of Como, 140'x12'.

For full information address

R. W. DRAPER, Clerk.

Mechanical and Electrical Equipment

Seguin, Texas.

Sealed proposals will be received by the Board of Trustees of the Seguin Electric Light & Power Co., at the office of the Company, Seguin, Texas, until 3 P. M. August 10, 1915, for Mechanical and Electrical Equipment, consisting of Water-wheels, Transmission Machinery, Generator and Switchboards.

Proposals for Mechanical and Electrical Equipment will be considered separately and collectively; collective proposals will receive preference.

Plans and specifications can be seen at the office of the Company, Seguin, Texas, or a copy will be mailed to anyone enclosing \$10 with request, said \$10 to be returned to each firm or person making a bona-fide proposal with plans attached.

Bids must be accompanied by a certified check for \$200, payable to Seguin Electric Light & Power Co. without recourse, and the successful bidders will be required to make good for each contract the sum of \$500.

The Seguin Electric Light & Power Co. reserves the right to reject any or all bids, or let both contracts to one concern or let them separately.

INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers whether they are advertisers or subscribers or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

Wants Sewer and Water Franchise.

Municipal officials planning the construction of sewer and water systems are invited to correspond with A. W. Jackman, 4714 Pitt St., New Orleans. Mr. Jackman states that he is prepared to accept the franchise on terms that will be attractive.

Removes New York Offices.

After August 9 the New York offices of the following Birmingham (Ala.) companies will be removed from 100 Broadway to the Equitable Bldg., 120 Broadway; Alabama Traction, Light & Power Co., Ltd.; Alabama Interstate Power Co. and the Alabama Power Co.

Agent for Kawneer Company.

Through its Southern representative, L. E. Davies, Candler Bldg., Atlanta, Ga., the Kawneer Manufacturing Co. of Niles, Mich., has appointed A. A. Bradford, 313 Loan & Exchange Bldg., Columbia, to be its representative in South Carolina. This factory makes copper store fronts, drawn-metal moldings, and, in fact, any kind of special metal work.

Coal and Ash-Handling Equipment.

Contract has been awarded by the Treasury Department to the Guarantee Construction Co., 90 West St., New York, for a coal and ash-handling and storage system for the United States Government Hospital for the Insane at Washington, D. C. The equipment consists of two coal-storage bunkers, coal-handling machinery and pneumatic ash-handling system.

New Philadelphia Manager.

Buffalo Steam Roller Co. of Buffalo, N. Y., builder of Buffalo Pitts road rollers and scarifiers, announces the promotion of Geo. P. White, who has been connected with the company for a number of years, to be manager of its Philadelphia office. With this appointment the company also reports the change of location of the Philadelphia office in the Bulletin Bldg. to the fourth floor, Room 404.

Steel Rolling Door Contracts.

J. M. Van Harlingen, 1629 Candler Bldg., Atlanta, reports that during the past week contracts for steel rolling doors were closed

with the following concerns: Hastings Bros. Co., Atlanta, 21 steel rolling doors for elevator and fire walls; H. P. King Company, Bristol, Tenn., one steel rolling door for elevator opening, and County Commissioners Lee County, Fort Myers, Fla., four steel rolling window curtains for protection of the County Clerk's office.

Morgan Veneer Co.

Ten carloads per week is the capacity of the Morgan Veneer Co., Pine Bluff, Ark., recently started. This company's plant is of mill construction, with power-house of steel, its machinery including two rotary cutting machines from the St. Joseph (Mich.) Iron Works, boilers from the Look-out Boiler Works of Chattanooga, etc. It is cutting gum veneer for furniture and box work.

District Manager for New York State

Ralph T. Coe, manager of the Canadian Sirocco Co., Ltd., Windsor, Canada, since the organization of the company, has resigned to enter the engineering service and sales field in New York State. Mr. Coe has been appointed district manager for Warren, Webster & Co. of Camden, N. J., and the American Blower Co. of Detroit, Mich., and will have offices at 519 Insurance Bldg., Rochester, and 19 Live Stock Exchange Bldg., Buffalo.

Steam Shovel Litigation Ends.

The Marlon Steam Shovel Co. and the Marlon-Osgood Company, both of Marlon, O., announce that the litigation carried on for several years between them has been satisfactorily and amicably adjusted. The settlement covers all machinery heretofore shipped by the Marlon-Osgood Company, and

grants to them shop rights to continue the use of those patents held by the Marlon Steam Shovel Co., which are involved in the Marlon-Osgood Company's machines as at present constructed.

Case Company Absorbs Perfection Road Machinery Co.

The J. I. Case Threshing Machine Co., Racine, Wis., has taken over the plant and equipment of the Perfection Road Machinery Co. of Gallon, O., maker of "Perfection" road graders, drags and roofer plows. Announcement is made that the plant will be moved from Gallon to Racine, and the graders, with many improvements, will be manufactured and sold as "Case" graders. The Case company is thoroughly familiar with the product of this concern, as it has handled "Perfection" equipment exclusively for several years.

Magazine Attachment for Linotype Machines.

Among the new inventions soon to be placed on the market is a multiple magazine linotype, for which patent has been allowed to J. W. Graham, Hinton, W. Va. We are advised that he already has seven inventions now in the Patent Office and two others to be filed, all of which apply to the changing of the old models of linotypes into modern machines, which it is claimed will put them in a class with the later models. One of his inventions, it is said, will increase the output of a typesetting machine from 10 to 15 per cent. and works in connection with eight magazines, which can be raised and lowered by hand or power at the instant command of the operator. The new

[Continued on Page 73.]



Showing destruction of Levee Road caused by flood.



Upper illustration shows another section of same road after the flood.

**Barrett's
PAVING
PITCH**

Levee Road at Middletown, O. Brick pavement filled with Barrett's Paving Pitch in 1892.

An Extraordinary Test

Twenty-three years ago this road at Middletown, O., was paved with brick and filled with Barrett's Paving Pitch.

Recently a section of the road was damaged by flood, and this gave an opportunity to observe carefully the condition of the Paving Pitch.

It still clung tightly to the bricks that were washed away. Samples of it were taken and found to be in exactly as good condition chemically as when new. In fact, if it were practicable to scrape or melt it off the bricks it could be used over again today in a new pavement and

would undoubtedly give perfect satisfaction for another twenty-three years.

Pitch is wonderful in its absolute immunity to the action of water. It ranks with gold and copper in its resisting power against the elements.

Service considered, it is the least expensive filler known and the easiest to apply. It maintains a perfect seal against the intrusion of water and frost. It eliminates the ancient expansion problem, for it makes every joint an expansion joint.

Booklets free on request. Address our nearest office.

BARRETT MANUFACTURING COMPANY

New York Chicago Philadelphia Boston St. Louis Cleveland Cincinnati
Pittsburgh Detroit Birmingham Kansas City Minneapolis Salt Lake City Seattle
THE PATERSON MFG. CO., Limited: Montreal Toronto Winnipeg Vancouver St. John, N. B. Halifax, N. S. Sydney, N. S.



[Continued from Page 71.]

speed-increasing attachment can be put on any of the present Intertype or Linotype machines at a nominal cost.

New Manager for Bayonne Casting Company.

President R. C. Stanley reports that a complete reorganization in the management of the Bayonne Casting Co., Bayonne, N. J., was effected on July 1. W. E. Oakley will be succeeded by J. F. McNamara as general manager, and such changes have been made throughout the foundry and office as will assure prompt and satisfactory service to its customers. Crucible steel castings, nickel castings and brass and bronze alloys are among the products of the Bayonne Casting Co.

Weston & Brooker Consolidation.

For convenience of operation Weston & Brooker, Inc., and Weston & Brooker Quarry Co. have been consolidated, and in the future the entire business will be conducted under the name of the Weston & Brooker Company, with offices at Columbia, S. C. Crushed and broken granite and other materials formerly produced will be handled by the company. Officers of the consolidation are T. I. Weston, president and treasurer; B. O. Brooker, vice-president and assistant treasurer, and W. S. Weston, secretary and general superintendent.

Locates Molding Sand Deposits in Virginia.

About a year ago M. T. Beazley of Woodford, Va., agreed to give his county, for road-building purposes, all of the gravel that it might need. The county authorities opened up several pits on his property, and these are said to have turned out to contain a fine grade of sand and gravel. Seeing this, Mr. Beazley prospected further and discovered an unlimited quantity of molding sand of fine quality. A siding was run to the deposit from the Richmond, Fredericksburg & Potomac Railroad, and this sand is now being shipped to a number of foundries. Mr. Beazley is continuing to broaden his developments and expects to become a large shipper of molding sand, sharp sand and gravel.

Mietz & Weiss Oil Engines.

Announcement is made that the Mietz & Weiss oil engine manufactured by August Mietz, 128-38 Mott St., New York, has been awarded the gold medal at the Panama-Pacific International Exposition. The company also reports the following orders have been placed for Mietz & Weiss oil engines: Town of Charter Oak, Iowa, one 50-horsepower and one 75-horsepower engine for lighting plant; Baer Bros., Stamford, Conn., one 150-horsepower engine; Sexauer-Lemko, Astoria, L. I., two 100-horsepower oil engines; T. B. Abell, Brooklyn, N. Y., one 5-horsepower engine; Anton Mak, West Wellington, Conn., one 25-horsepower engine, and J. F. Berdez & Co., Havana, Cuba, one 25-horsepower and one 35-horsepower oil engine.

Contracts for Tile and Brick.

The Bessemer Fire Brick Co., Birmingham, Ala., R. L. Gamewell, Sales Manager, has secured through its agents, Roper & Strauss of Atlanta, a contract for 90 carloads of Bessco Hollow Tile to be furnished to the city of Atlanta and Fulton county, Georgia, for use in the construction of the new agricultural and industrial fair buildings, the first two units of which will be 20x100 feet each in area, and other units are to be added yearly. The company has also sold hollow tile for residences in course of erection at Nashville and Sewanee, Tenn., and for an office building at North Birmingham. It will furnish the face brick for two residences in Birmingham now under contract.

Trial Trip of the Waterboat Aquadon

Last Friday the Boston Provision & Ship Supply Co. of New York and the Bolinders Company of Stockholm, Sweden, with New York offices 30 Church St., jointly invited a number of engineers, merchants and others interested to be their guests on a trial trip of the oil-driven waterboat Aquadon, which is owned by the former company. The trip was a successful one from every standpoint. The Aquadon is to be used as a waterboat in New York harbor. It is fitted with four watertight bulkheads, dividing the ship into five compartments. The first compartment is the chain locker, second and third the fresh water tanks, fourth the engine-room, and the last compartment is the

storage tank for fuel oil. The water service pump for rapid handling of the cargo of fresh water is situated on the starboard side of the engine-room and is drawn from the main engine. Among the special features of the Aquadon is the power plant. It consists of one 4-cylinder direct reversible Bolinders fuel oil engine of 100 B. H. P., which is said to give the boat a speed of about 8 knots light and 7 knots loaded, with a guaranteed consumption of fuel oil at 63 pounds per horse-power hour. Exhaust gases from the engine are carried from the silencers up into a funnel, the top of which is about 12 feet above the deck.

Bessemer Motor Trucks.

One change in specifications and the addition of a 3-ton worm-drive truck to the three models formerly manufactured is announced by the Bessemer Motor Truck Co., Grove City, Pa., manufacturer of motor trucks exclusively. Bosch magneto, made by the Bosch Magneto Co., 100 W. 56th St., New York, will be used as regular equipment, and the company will continue to manufacture its model C truck, capacity 2000 pounds; model A, capacity 3000 pounds, and model D, with a capacity of 4000 pounds. An attractive catalogue has been issued by the company describing in detail the construction features and specifications of the Bessemer trucks. Illustrations, showing Bessemer trucks as used in many lines, are also given.

Buffalo Exhaust System.

The Buffalo Forge Co., Buffalo, N. Y., announces the successful installation of its exhaust system for the British Insulated & Helsby Cables Co., Ltd., Prescott, Lancashire, England. The fan used is a No. 45 Buffalo slow-speed high efficiency exhauster with direct-connected motor. Fifteen machines and six floor sweeps are used, and it is said the system is operated very successfully, requiring six horse-power for the motor. Unusually good results obtained are reported to have been due as much to the design of the piping as to the high efficiency of the fan itself, which is operating less than three ounces pressure and with a uniform velocity in the pipes of less than 300 feet per minute. Discharge from the fan is carried outdoors approximately 100 feet to a Cyclone collector in the boilerhouse. The total length of the system is 280 feet.

Ice-Making Plants, Engines, etc.

The Vilter Manufacturing Co., builders of ice-making and refrigerating machinery, Milwaukee, Wis., have made the following installations of their products: A 25-ton refrigerating plant for Wm. Koch, Philadelphia; 2-ton refrigerating plant at Grand Junction, Col., for the Coffin Packing & Provision Co. of Denver; a rolling mill type Corliss engine for the Aluminum Goods Manufacturing Co., Two Rivers, Wis.; also one for the Phoenix Knitting Co., Milwaukee; a girder-frame Corliss engine for the Borden's Condensed Milk Co., Sterling, Ill.; refrigerating plants, respectively, for the Manufacturers' Contracting Co., Wilmington, Del.; Nathan Berg, Philadelphia; H. H. Barreda, Mayaguez, Porto Rico; the New Zealand Transport Board and J. J. Nevin & Co., Wellington, New Zealand, and the Union Steamship Co., Dunedin, New Zealand.

Noel Ice and Cold Storage.

Noel & Co., Nashville, have facilities that include modern cold-storage equipment in combination with 100-ton ice plant, besides lard refinery, which has not yet been operated. The storage plant has a capacity of 750,000 cubic feet, of reinforced concrete construction, with 17-foot curtain wall having 12-inch regranulated cork in outside wall. Freezer section is built in center of building, using split column and two layers of 3-inch cork board, continuous from basement to roof. Brine circulation is used throughout, obtaining temperature as low as 10 degrees below zero in freezers. A 250-ton cross-compound refrigerating machine, built by Ice & Cold Machine Co., St. Louis, has been installed. David I. Davis & Co., Chicago, were the architects and consulting engineers. Other contracts were as follows: Armstrong Cork & Insulating Co., Pittsburgh, Pa., cork work; Bush Building Co., Nashville, brick work; Herbrick & Lawrence, Nashville, electrical work; Otis Elevator Co., New York, three elevators; balance of work under Noel & Co.'s supervision.

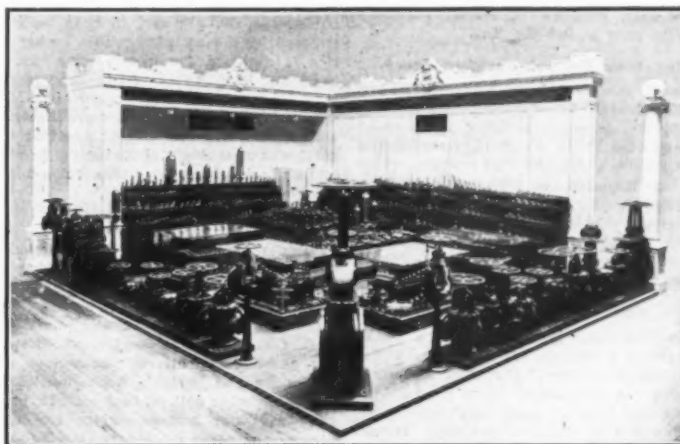
Installations of an Electric System.

The Simplex Surface Contact Co., Harrisburg, Pa., has just closed a contract to install its system in a part of the Bethlehem Steel Co.'s plant at Bethlehem, Pa. It also has another contract to install the system for the Lehigh Coal & Navigation Co.

Henry W. Kingsbury, People's National Bank Bldg., Scranton, Pa., is sales manager for the company, whose system is for the electrification of interurban, street, mine or industrial railways and in such a manner that employees and others will be safe from the electric current. A handsomely-illustrated pamphlet of 30 pages has been published describing the method of operation in detail and the success attained even under adverse weather conditions. It says that the transmission wires are placed under ground enclosed in conduit and thoroughly insulated so they cannot shock employees or short circuit, ground, or affect any other machine. The first principle of the system is its absolute safety.

Lunkenheimer's Panama-Pacific Exhibit.

The products of the Lunkenheimer Co. of Cincinnati displayed in the Machinery Palace of the San Francisco Exposition impress the visitor with the exceptionally large and complete variety of engineering appliances which this company manufactures. In great variety and artistic arrangement



are shown bronze, iron, "puddled" semi-steel and cast-steel globe, angle, cross, check, gate balanced throttle and "non-return" safety boiler stop valves; also bronze and iron pop safety, relief and blow-off valves; water columns and gauges; whistles, ground key work, injectors and ejectors; bronze fitting and unions; cylinder lubricators, oiling devices, oil and grease cups; automobile and motor-boat specialties, etc. An examination of any of the articles displayed reveals that strength, durability and expert workmanship are prime factors in their construction.

"Electric" Stevedores.

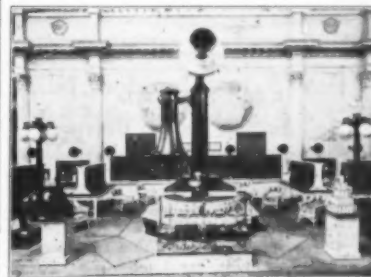
Beginning with 1911 the development of the storage battery industrial truck has been very rapid. Today, it is said, over 1000 of these machines are used in the United States and Canada. They are now extensively employed in manufacturing plants and are solving the transfer problem of congested freight and baggage. A. Jackson Marshall, secretary of the Electric Vehicle Association of America, 29 W. 39th St., New York, in commenting on the development of the electric industrial truck, writes: "In railway terminals alone where these modern electric carriers have supplanted the hand truck, it is estimated that there is a total saving of 66 per cent. A short description of the operation of an electric industrial truck will show its simplicity and safety. The controller is enclosed and an automatic cut-off switch minimizes accidents. One handle is used as a controller lever, and the other handle for steering. The controller returns to neutral as the hand is removed from the lever. The cut-off switch cuts off the power when the foot is removed from the brake pedal. The driver, standing erect on the end of the truck, with hands on the controller and steering lever, respectively, and foot on the brake pedal, is in the best possible position to guide and control his load. The simplicity of operation does away with the necessity for having expensive operators, the average freight handler being taught to successfully operate a truck, even in congested plants or terminals, in about 48 hours. The ordinary baggage truck has a capacity of about 2000 pounds, and is used for carrying both baggage and mail. The immense increase in baggage, express and mail matter being moved by our railroads demanded proportional increase of efficiency in its handling, and slow-moving man-powered hand trucks have gradually given way to the modern "electric" stevedore. Time studies made in manufacturing plants and at the great piers in seaport cities indi-

cate beyond a question that "electric" stevedores will supplant the hand truck wherever operating conditions warrant. More than this, the shipping platforms and piers of the future will be designed especially for the more efficient operation of these electric. They already have a tremendous influence on the short haul. Down in Savannah you may see cotton moved across great piers by "electric" stevedores equipped with hoists and cranes. Two of these little electric would handle more cotton in one day than twenty freight handlers. At the Bush docks in Brooklyn you can see the same cotton placed in cars by battery truck cranes, the cars first being "spotted" by the electric. It is taken out of the cars at the mill by the individual trucks and moved to storage, and then to the spinning-room by them. Later the bobbins, dye tubs and beams are moved from mill to mill by small electric shop trucks. While the largest field for the "electric" stevedore is in handling baggage and freight at terminals and piers, they are being used to a great extent, however, in factories and industrial plants, and more and larger installations are being made

continually. In shop and mill transportation, in storage warehouse, in freight transfer stations, in supply and provisioning work for railroads, steamships, etc., in brick and lumber yards, in stoking in power plants, in wholesale and retail packing, shipping and receiving, and even in building operations, the electric industrial truck finds extensive application. It should not be overlooked that this small truck has many of the fundamental advantages of its larger brother in the street, namely, it is clean, odorless and practically silent, its simplicity of construction is a great aid in operation and maintenance, and its freedom from fire and explosion commends it to fire underwriters and commissioners."

High Honors Awarded Western Electric Products at Exposition.

The International Jury of Award of the Panama-Pacific International Exposition has completed its work of judging exhibits in the Palace of Manufacturers, and announces that it has awarded the following medals to the Western Electric Co., 463 West St., New York: The Grand Prix for the exhibit as a whole. This award signifies that the products displayed are superior to all others of their kind in the world. Gold medals were awarded as follows: One for



WESTERN ELECTRIC'S PANAMA-PACIFIC EXHIBIT.

telephone switchboards and equipment, representing apparatus standard throughout the world. Another for telephone train dispatching and control apparatus, representing a decided advance in the art as evidenced by the adoption of this type of equipment by many of the leading railroads of the world. A third for insulated wires and cables, which represent a degree of perfection in the manufacture of telephone cable that contributes largely to the present-day development of the telephone system. Two

bronze medals were awarded for the company's mine rescue equipment and mine telephones. The following silver medals were awarded to manufacturers of electrical devices, with the distribution of whose products the Western Electric Co. is closely identified: Electric irons manufactured by the American Electrical Heater Co., Detroit, Mich.; to the Gray Pay Station Co., Hartford, Conn., for telephone pay stations; for annunciators manufactured by Edwards & Co., 140th and Exterior Sts., New York, and to the Conlon Electric Washer Co., 312 N. May St., Chicago, for Western Electric-Conlon washing machines.

TRADE LITERATURE

All About "Caterpillar" Products.

The Caterpillar Times for June, 1915, has been issued by the Holt Manufacturing Co., Inc., Stockton, Cal. It tells about the "Caterpillar" tractors, harvesters, trailers, plows, harrows and levelers. The illustrations are appropriate and full of information. Among them are pictures of one of the machines grading a road near Indian River City, Fla., and a tractor pulling a five-disc plow at Del Rio, Tex.

Keystone Copper-Bearing Steel.

Among pamphlets now being distributed by the American Sheet & Tinplate Co., Pittsburgh, Pa., is one containing a discussion on corrosion by D. M. Buck, metallurgical engineer, in which the rust-resisting qualities of Keystone copper-bearing steel is emphasized. In his article Mr. Buck describes the chemical compositions of various metals and shows by illustrations the manner of testing iron and steel in order to determine their non-corrosive qualities.

Concerning Sisal Rope.

The Columbian Rope Co., Auburn, N. Y., has issued a bulletin on "Salesmanship of the Columbian Crew," the chief feature of which is "A Little Story About Sisal Fibre," this being entertainingly and informatively written and excellently illustrated. It tells where sisal fibre comes from and what it is, besides presenting many interesting facts concerning its manufacture. In the bulletin are several other articles of merit which will well repay perusal.

Asphalt Roadways.

Beautifully reproduced views of the roads of some of the best known estates on Long Island, public parks and country clubs are contained in a booklet on "Asphalt Roadways for Private Estates, Club Grounds and Parks," issued by the Barber Asphalt Paving Co. of Philadelphia. The text consists of a discussion of the best types of roadway construction under conditions which demand attractiveness, general availability and freedom from the dust and oil nuisance, as well as durability.

Culverts and Road Making.

The Highway Magazine, distributed by the Dixie Culvert & Metal Co. of Atlanta, Ga., contains in its July number "The Building and Maintenance of Oiled Roads" by T. B.

Twaddle; "Cash, a More Satisfactory Tax Than Labor"; "Virginia's Convict Road Force"; "Estimating the Cost of Culverts and Other Small Structures in Road Building," besides a number of other shorter but none the less interesting and valuable contributions. There are several pictures of installations of Dixie culverts in the South.

At the Draper Company's Plant.

Cotton Chats, No. 152, June, 1915, is issued by the Draper Company, Hopedale, Mass., and it invites its friends to pay the industry a visit. "For years," it says, "we have been working to improve our products and processes of manufacture, and a personal view of our plant will be more convincing than any amount of description, whether verbal or in print." Hopedale, which is only 1½ miles out of Milford, Mass., is but 34 miles from Boston, 18 from Worcester and 26 from Providence. A neat map shows how to get there.

Bucket Carrier System.

Thirty-five thousand copies of Bulletin No. 17, describing pivoted bucket carriers manufactured by the Gifford-Wood Company, Hudson, N. Y., are said to have been distributed by the company. This bucket carrier is designed for use in elevating and conveying coal, ashes, coke, stone, gravel, sand and other similar materials. Many special features of the carrier are illustrated and described in the bulletin, together with particular advantages of its use for handling coal and ashes in power plants, boiler-houses, railroad coaling stations, etc.

Randle Machinery.

"Leader" injectors and ejectors, engines, boilers and sawmill and woodworking machinery are illustrated and described in a new general catalogue issued by the Randle Machinery Co., Powers St. and C. H. & D. R. R., Cincinnati, O. Specifications of steam, gas, gasoline and oil engines, high-pressure stationary and portable horizontal boilers, upright tubular boilers, feed cookers, pumps and feed-water heaters, engine and boiler fittings and other machinery, together with a list of second-hand miscellaneous machinery offered for sale by the company, are included in the catalogue.

Commercial Fertilizer Yearbook.

In the "1915 Yearbook," issued by the Commercial Fertilizer, Atlanta, Ga., are given many interesting articles and much valuable information pertaining to the use and manufacture of fertilizers. The book is devoted exclusively to the interests of the fertilizer manufacturer and allied industries, and contains directories of fertilizer manufacturers, cottonseed-oil mills, and also alphabetical and classified directories of allied trades. Every subscriber to Commercial Fertilizer receives a copy of the "1915 Yearbook." The price to others for single copies is \$1.

Fertilizer Handbook for 1915.

Many special articles and statistics of interest to the fertilizer trade, in addition to a classified directory and buyers' guide of

fertilizer manufacturers and allied lines, including cottonseed-oil mills, packers, renderers, sulphuric-acid plants, phosphate mines, chemists, brokers, importers and exporters, dealers of fertilizer materials and supplies, manufacturers of fertilizer machinery, etc., are given in the eighth annual edition of "The American Fertilizer Handbook," published by the Ware Bros. Co., 1010 Arch St., Philadelphia, Pa. This reference book and directory of the commercial fertilizer industry and allied trades contains over 400 pages, is substantially bound in a stiff cloth cover, and sells for \$1 postpaid.

Waterbury Armored Rope.

A catalogue has been recently issued by the Waterbury Company, 80 South St., New York, introducing what is claimed to be the first radical and most important improvement in wire rope construction in many years. Each strand of Waterbury armored wire rope (Gore patent) is wound with flat steel wire, having convex edges, and this forms a protective armor for relieving the tensile strength wires of all abrasive wear and retains intact the strength of the rope until after these flat wires have been worn completely through. Many illustrations showing Waterbury armored rope in various lines of work are given in the catalogue. Other Waterbury products include Manila and sisal cordage, standard wire rope, "Fiberclad" wire rope, music wire and binder twine.

All About Piping.

Bulletin No. 20 of the National Tube Co., Pittsburgh, is a unique publication in that it offers pipe information readily accessible for busy men in various lines of endeavor. It is a comprehensive and detailed index of all the previously issued bulletins of the company, and will be found invaluable by everyone who needs information along the line of which it treats. Among the different subjects treated are durability of welded pipe in service; corrosion of hot-water piping in bathhouses; corrosion of boiler tubes; steel pipe vs. wrought-iron pipe in refrigeration work; manufacture and use of Shelby seamless steel tubing; relative corrosion of iron and steel pipe, etc. In addition to this is Bulletin No. 21, treating of National Bedstead Tubing, this containing 10 illustrations in its eight pages.

"Hy-Rib" Handbook.

One of the most comprehensive and complete catalogues on Hy-Rib and metal lath products is represented in the 13th edition of the "Hy-Rib Handbook," issued by the Trussed Concrete Steel Co., Detroit, Mich. This publication embraces all the advantageous features and information in previous editions and includes many valuable and important additions. Various types of Hy-Rib are shown with their applications to all styles of construction. Specifications and reading matter have been revised and include recent developments and improvements in Hy-Rib construction of floors, roofs, walls, ceilings, silos, tanks, conduits and concrete structures without forms. Many new applications of the company's

products are also given in the illustrations and information on pressed-steel studs and Kahn pressed-steel construction.

Locomotive Cranes.

Many Southern installations of Ohio locomotive cranes are given in the recently issued catalogue of the Ohio Locomotive Crane Co., Bucyrus, O. In presenting the catalogue the fact is mentioned that the company devotes its time and attention exclusively to the manufacture of locomotive cranes, and that it is prepared to furnish cranes of a wide variety of types, ranging from 5 to 50-ton capacity, operated by steam, electricity, compressed air, oil or gasoline engines. A greater part of the catalogue treats exhaustively of the construction features of the cranes with each part illustrated and described in detail. Several pages in the back of the book contain a partial list of "Ohio" crane purchasers. A perusal of this list shows that the company's products are used in all parts of the United States.

Eternity Tile Roofing.

A pamphlet has been issued by the Warren-Ehret Company of Philadelphia, in which is pointed out the advantages of putting roof space to practical uses. In introducing this subject the company states: "There are hundreds of thousands of buildings, homes, hotels, business establishments, schools, etc., that are actually wasting untold square miles of 'sky space' that could be utilized in scores of ways—for recreation, roof gardens, sleeping quarters in torrid weather, drying purposes, etc. In other words, a roof should serve more than a protection from the elements. It should, where practicable, be made to solve the fresh air problem for the many. Eternity tile roofing is used on hundreds of buildings throughout the country, affording an impervious roof and a floor as solid as brick pavement."

"Standard" Concrete Mixers.

Many improved features for further increasing the economy and efficiency of "The Standard" low-charging concrete mixers, manufactured by the Standard Scale & Supply Co., 243-45 Water St., Pittsburgh, Pa., are illustrated in the new catalogue Y-15, which it has issued. The company states it was the first to introduce a low-charging, open drum, direct from wheelbarrow, concrete mixer, and that there can be no better proof of the greater economy of this type of mixer, in concrete work, than the enormous increase in the demand during the last few years for this simplified design. Among the types illustrated are "The Standard" low-charging concrete mixers with folding platform, steam and gasoline engine driven, skid mounted, portable and traction types with rear discharge and distributing spout, and mixers with hoists for elevating concrete and other uses. Other products manufactured by the Standard Scale & Supply Co. include "The Standard" scales, steam engines and boilers, gasoline engines, contractors' machinery, hoists, tower equipment and elevators, pumping outfits, dump wagons, cars, scrapers, wheelbarrows, carts, trucks, etc.

Special Advertisements of General Interest.

For Sale—Camden, N. J.

Suitable for War Orders or any Business

Immediate Occupancy. Brick buildings, 93,000 feet of floor space with very fine power plant, 4.6 acres on water front, Philadelphia Lighterage limits. **Price a decided bargain.** Substantial mortgage.

L. N. CREIGHTON, Agent
BAYONNE, N. J.

PAPER MILL

FOR SALE

At Little Falls, N. Y. Old-established business. Call or address

PERRY KINGSTON, Little Falls, N. Y.

ICE PLANT

FOR SALE

A ten-ton ice plant, ice cream and soda bottling outfit for sale in a good North Georgia town of over 3000 population.

This property can be bought at the right price and good terms.

P. O. Box 202 WINDER, GA.

DELAWARE RIVER PROPERTY

For Sale

10 acres of land, buildings nearly new, covering about 20,000 square feet of floor space, boilers, engines, plenty of labor, deep water, three railroads. Excellent opportunity to purchase a property that is particularly adapted for a forge works or shipyard.

W. L. BIRTWELL, Crozer Building, Philadelphia, Pa.

SALES AGENCY

In New England territory would like to represent reliable concern in iron or machinery line, straight commission basis. Prompt attention to all inquiries. Have storage facilities—salesman on road—equipped with business autos. Write for information. Address

VULCAN CO. Allston Sta., Boston

Oil Mill For Sale

A two-press cottonseed-oil mill, situated 16 miles from railroad. The mill is in good condition, ready to operate, and can be removed and loaded on cars at a moderate cost. Has not been operated for several years, owing to boll-weevil destroying the cotton crop. The mill must be sold, and a rare bargain awaits someone. Can be made to pay for itself at the price asked in one season's operation.

I. N. ELLIS, Hazlehurst, Miss.

Merchants Looking for Better Location

with all conditions in their favor, should write me about new **EARLE BUILDING**, Birmingham, Ala.—five stories and basement—strictly modern, full fireproof construction in heart of city, and one hundred feet from best improved corner in the South.

R. A. TERRELL

503 Title Guarantee Bldg. Birmingham, Ala.

Tampa Machinery Exchange

TAMPA, FLA.

**Buy, Sell and Exchange Machinery
of All Kinds**

WRITE US YOUR WANTS

Proposals advertised in the Manufacturers Record bring good results.

Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, Southern Illinois, Southern Indiana

What We Offer You

THERE are millions of acres of the most productive farm, pasture and orchard lands in the South offering distinct advantages to homeseekers. Good farmers can make more money in the South from the labor and capital invested than elsewhere in America. Careful investigation will prove this and also that the most pleasant, healthful home conditions are in this section. One can find no better region for dairying, or for poultry and live stock raising. Abundant grasses and forage plants, pure water, the long grazing seasons, the low cost of production and the good markets make the South unequalled today in opportunities for these industries. Nearly all authorities who have studied the situation agree that this is so. For fruit and truck raising, for general or special farming, there are all conditions for success. Lands in good locations are to be had at lowest prices for equally productive lands anywhere.

The South not only offers the opportunity for farm homeseekers, but needs them. The Southern Railway Lines want settlers in their territory who can turn the available lands into highly productive places to furnish the foodstuffs necessary for the South itself and to take advantage of the outside markets which may be supplied. They are anxious to build up their territory as part of their efforts to make their own properties more productive.

For this reason their Industrial and Agricultural Department is maintained. Its co-operation is offered in every way possible to the homeseeker who will investigate the opportunities of the South; every assistance is extended which will enable him to find the location where are the home conditions he desires and which will give him prosperity. Immigration agents will advise with him. The information about lands, crops and the various sections and conditions along the roads, carefully collected by the companies, is at his command. Careful attention will be given to secure for him the special information desired on particular subjects or localities. Booklets and other printed matter will be sent on application.

After the homeseeker is located, trained and practical agricultural field agents, live stock, dairy and poultry agents familiar with local conditions will be at his service in solving any of the problems which his new location may bring. Market agents will help him to find the best market for his products.

What we do for the homeseeker, we also do for the manufacturer looking for a location for his plant. Industrial agents will help him solve the questions as to the proper point where raw materials may be satisfactorily assembled; where labor, power, transportation and market conditions are best; where necessary lands are properly located and to be had; where local capital, if wanted, will join in building the plant, and where all the other conditions which help to make the success of the industry and the welfare of its labor are to be found.

We offer our services in behalf of a territory reached by nearly 10,000 miles of railway, the people of that territory and a company which is earnestly at work in co-operation with every person or interest affected to build up the territory and advance the fortunes of those who are developing the lands and the many opportunities in the South.

Southern Railway
Southern Railway in Mississippi
Mobile & Ohio Railroad
Georgia Southern & Florida Ry.
Virginia & Southwestern Ry.
Augusta Southern Railroad

M. V. RICHARDS
Industrial and Agricultural Commissioner
WASHINGTON, D. C.

Danville & Western Railway
Tallulah Falls Railway
Blue Ridge Railway
Hawkinsville & Fla. South'n. Ry.
Macon & Birmingham Railway
Northern Alabama Railway

The South's Mountain Region

Unmatched on Earth and Surpassing in Size England and Scotland

[Extracts from editorial in Manufacturers Record.]

How little the South knows about itself and how little the country knows about the South may be typified in the vague, indefinite knowledge of this section and of other sections, of the wonderful mountain regions which stretch from West Virginia to Northern Alabama.

Here and there are found spots, such as some of the summer resorts in the Virginia and Carolina mountains and a few places noted as winter as well as summer resorts which are known to the general public.

In "Our Southern Highlanders," by Horace Kephart, there are some striking facts regarding this wonderland of the South. "We are," says he, "wont to think of the South as a low country, with sultry climate; yet its mountain chains stretch uninterruptedly southwestward from Virginia to Alabama, 650 miles in an air line. They spread over parts of eight contiguous States and cover an area somewhat larger than England and Scotland, or about the same as that of the Alps. In short, the greatest mountain system of Eastern America is massed in the Southland. In its upper zone one sleeps under blankets the year round. * * *

"In all the region north of Virginia and east of the Black Hills of Dakota there is but one summit (Mt. Washington, in New Hampshire) that reaches 6000 feet above sea level, and there are only a dozen others that exceed 5000 feet. By contrast, south of the Potomac there are 46 peaks and 41 miles of dividing ridges that rise above 6000 feet, besides 288 mountains and some 300 miles of divide that stand more than 5000 feet above the sea. In North Carolina alone the mountains cover 6000 square miles, with an average elevation of 2700 feet and with 21 peaks that overtop Mt. Washington."

And then the writer asks himself, in view of these facts, why so little is known about this region. "The Alps and the Rockies, the Pyrenees and the Harz," said he, "are more familiar to the American people, in print and picture, if not by actual visit, than are the Black, the Balsam and the Great Smoky Mountains. It is true that summer tourists flock to Asheville and Toxaway, Linville and Highlands, passing their time at modern hotels and motoring along a few macadamized roads, but what do they see of the billowy wilderness that conceals most of the native homes? * * * We read more and talk more about the Filipinos, see more of the Chinese and the Syrians, than of these three million next-door Americans who are of colonial ancestry and mostly of British stock." * * *

Referring to the section of this mountain region known as the Unakas, attention is called to the fact that

"while the Blue Ridge has seven peaks that rise above 5000 feet, the Unakas have 125 summits exceeding 5000 feet and 10 that are over 6000 feet. Connecting the Unaka chain with the Blue Ridge are several transverse ranges, the Stone, Beech, Roan, Yellow, Black, Newfound, Pisgah, Balsam, Cowee, Nantahala, Tusquitee and a few minor mountains, which as a whole are much higher than the Blue Ridge, 156 summits rising over 5000 feet and 36 over 6000 feet above the sea level."

Referring to the beauty of this mountain region and to the age of these mountains, which justify the name Grandfather given to one of North Carolina's mountain peaks, Mr. Kephart says:

"The foreground of such a landscape, in summer, is warm, soft, dreamy, caressing, habitable; beyond it are gentle and luring solitudes; the remote ranges are inexpressibly lonesome, isolated and mysterious; but everywhere the green forest mantle bespeaks a vital present; nowhere does cold, bare granite stand as the sepulchre of an immemorial past."

"And yet these very mountains of Carolina are among the ancients of the earth. They were old, very old, before the Alps and the Andes, the Rockies and the Himalayas were molded into their primal shapes. Upon them, in after ages, were born the first hardwoods of America—perhaps those of Europe, too—and upon them today the last great hardwood forests of our country stand in primeval majesty, mutely awaiting their imminent doom."

"The richness of the Great Smoky forest has been the wonder and the admiration of everyone who has traversed it. As one climbs from the river to one of the main peaks he passes successively through the same floral zones he would encounter in traveling from mid-Georgia to Southern Canada."

"Starting amid sycamores, elms, gums, willows, persimmons, chinquapins, he soon enters a region of beech, birch, basswood, magnolia, cucumber, butternut, holly, sourwood, box elder, ash, maple, buckeye, poplar, hem-

lock and a great number of other growths along the creeks and branches. On the lower slopes are many species of oaks, with hickory, hemlock, pitch pine, locust, dogwood, chestnut. In this region nearly all trees attain their fullest development. On north fronts of hills the oaks reach a diameter of five to six feet. In cool, rich coves, chestnut trees grow from six to nine feet across the stump, and tulip poplars up to 10 or 11 feet, their straight trunks towering like gigantic columns, with scarcely a noticeable taper, 70 or 80 feet to the nearest limb."

"Ascending above the line of 3000 feet, white oak is replaced by the no less valuable 'mountain oak.' Beech, birch, buckeye and chestnut persist to 5000 feet. There, where the beeches dwindle until adult trees are only knee-high, there begins a sub-arctic zone of black spruce, balsam, striped maple, aspen and the 'Peruvian' or red cherry."

"I have named only a few of the prevailing growths. Nowhere else in the temperate zone is there such a variety of merchantable timber as in Western Carolina and the Tennessee front of the Unaka system. About 120 species of native trees grow in the Smoky Forest itself. When Asa Gray visited the North Carolina mountains he identified, in a 30-mile trip, a greater variety of indigenous trees than could be observed in crossing Europe from England to Turkey, or in a trip from Boston to the Rocky Mountain plateau. As John Muir has said, 'our forests, however slighted by man, must have been a great delight to God; for they were the best He ever planted.'"

"The undergrowth is of almost tropical luxuriance and variety. Botanists say that this is the richest collecting ground in the United States. Whether one is seeking ferns or fungi or orchids, or almost anything else vegetal, each hour will bring him some new delight. In summer the upper mountains are one vast flower garden; the white and pink of rhododendron, the blue of azalea, conspicuous above all else in settings of every imaginable shade of green."

It ought to be made more widely known, and far more attractive than the mountains of Colorado.

It ought to be advertised ten times more broadly than it has ever been advertised.

It ought to be crowded, winter and summer, with people from every part of the land, North and West, as well as South.

The possibilities for this section as a resort region are unsurpassed by any other section of any other country on earth. And yet the resort feature, as great as its potentialities are, is not so great as the possibilities of this region for the development of industrial interests, where climatic advantages would give the highest possible efficiency to workmen.

Nowhere else in all the land can there be found a region where the raw materials for manufacture and the foodstuffs for maintaining population can be so advantageously assembled in connection with a climate so invigorating, winter and summer, as that of this wonderland from West Virginia to North Alabama.

If these advantages can be continuously and unceasingly and broadly made known to the country, there will eventually come a development worthy of the matchless charms and limitless resources of this Heaven-blessed country.

The Clinchfield Runs Through the Heart of this Region

CAROLINA, CLINCHFIELD & OHIO RAILWAY

R. F. BREWER, Industrial Agent

JOHNSON CITY, TENN.

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